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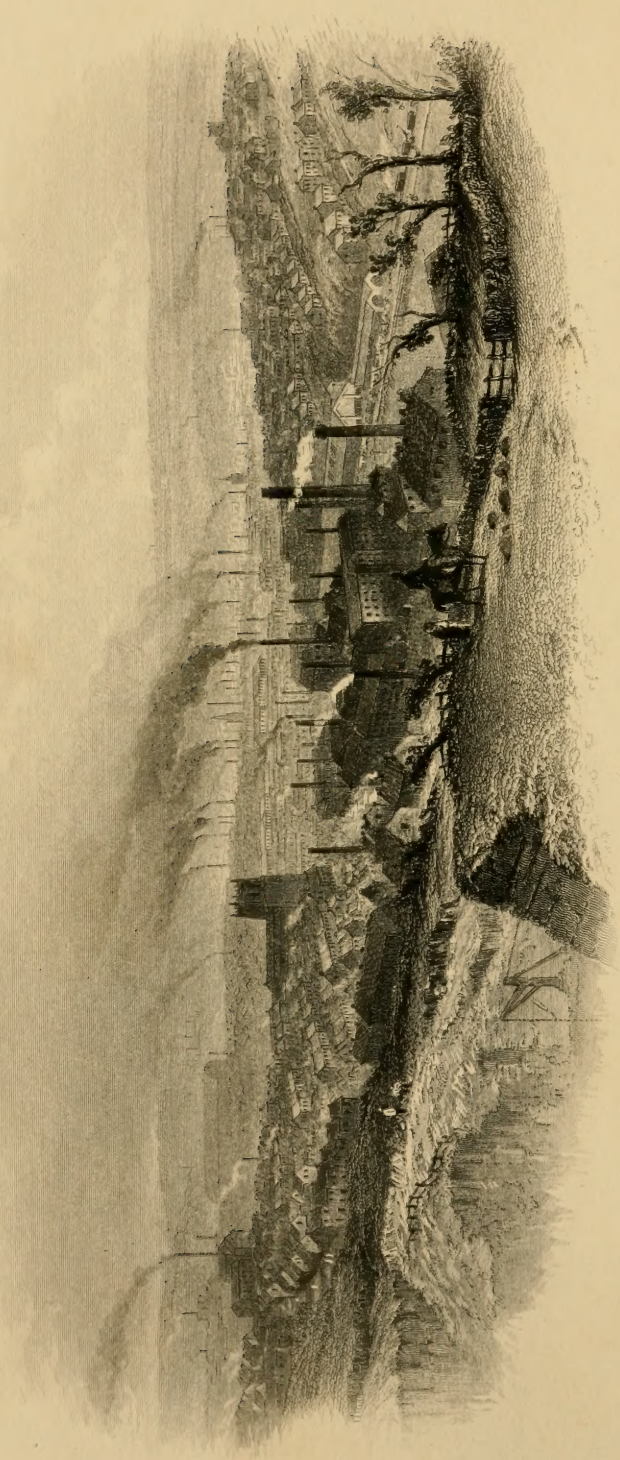












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HISTORY  
OF THE  
WORSTED MANUFACTURE  
IN ENGLAND,

FROM THE EARLIEST TIMES:

WITH  
INTRODUCTORY NOTICES OF THE MANUFACTURE  
AMONG THE ANCIENT NATIONS, AND  
DURING THE MIDDLE AGES.

BY  
JOHN JAMES, F.S.A.,  
AUTHOR OF THE HISTORY OF BRADFORD, ETC.

LONDON:  
LONGMAN, BROWN, GREEN, LONGMANS, AND ROBERTS;  
AND  
CHARLES STANFIELD, BRADFORD.

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April, 1941



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TO THE

COMMITTEE OF WORSTED MANUFACTURERS

FOR THE COUNTIES OF

YORK, LANCASTER, AND CHESTER:

THIS WORK,

UNDERTAKEN AT YOUR SUGGESTION,

AND

UNDER YOUR PATRONAGE AND DIRECTION,

IS

MOST RESPECTFULLY INSCRIBED BY

THE AUTHOR.

*Bradford, June, 1857.*







## PREFACE.

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To the textile arts England owes much of her prosperity and supremacy. Her wool fabrics have for ages employed a large portion of the population, and have ever been considered a fruitful source of wealth. Since the days of Edward III., the worsted manufacture, being peculiarly cherished in this country, has continually extended its borders. But its rapid progress during the last few years is with a single exception—that of cotton—unparalleled in the history of commercial enterprise, and exhibits in the most wonderful view the grand fact, that the application of steam power has given in a short period, an impetus and growth to commerce and the arts of life, greater than that acquired by the labour of ages. Worsted now classes among the greatest of British staple manufactures, and has become one of the most productive fields of wealth.

Of so extensive and important a branch of national industry, the Committee of Worsted Manufacturers\* (to whom this work is inscribed) conceived that the period had approached, when a full and accurate history of it could not fail to be both useful and interesting to a large class of readers. Accordingly the Committee offered me their patronage, and the free use of their valuable records, if I would undertake the preparation of this work. Although in a declining state of health, I accepted this generous proposal, but without

\* The following are the names of the gentlemen constituting the Worsted Committee:—*Leeds*: Henry Hall, William Wilkinson. *Bradford*: John Rand, Chris. Waud, William Garnett, William Rouse, John Wade. *Gomersal*: Thomas Burnley. *Halifax*: Edward Akroyd, M.P., John Whitworth. *Sowerby*: William Morris. *Ovenden*: Henry Ambler. *Lightcliffe*: Daniel Carter. *Keighley*: John Brigg, John Craven, John Sugden, Samuel B. Clapham. *Dalton near Huddersfield*: Robert Henry Tolson. *Manchester*: Frederick Phillips, Robert Kay, George Jefferson Armstrong. *Newchurch, Rossendale, Lancashire*: Samuel Lord. *Rawtenstall, Lancashire*: Henry Hoyle Hardman. *Yealand near Lancaster*: H. R. Ford. *Preston*: John Swainson. *Lomeshaw near Burnley*: William Ecroyd.

expecting that I should live to complete my labours. Under the continual pressure of sickness I have struggled onward to the goal, and am recompensed by the pleasing thought that I have, by unflinching perseverance, reached it. My pleasure is like that of a weak and weary traveller, who after traversing a long and intricate track, reaches at last the end of a perilous journey—he looks back and recounts with joy the toils and obstacles which have marked and impeded his course, and the very difficulties he has overcome enhance the reward of his toil.

From these congratulations there is a serious drawback. I cannot conceal from myself the fact that this work bears many traces of having been written in a season of ill health and depression, alike inimical to vigour of style, or the condensation and arrangement of facts. When it is considered that a large portion of the volume had to be drawn from MS. sources; that much of the information respecting the manufacture during the last sixty years had to be obtained orally from numerous parties; that conflicting statements had to be reconciled; that the subject itself had scarcely been touched, I may truly say in the words of an old Author:—“A painful work it is I assure you, and more than difficult, wherein what toyle hath been taken as no man thinketh, so no man believeth, but he that hath made the trial.” Whatever other merit this work may possess, I am satisfied that few facts of importance have been omitted. The British Museum, the Public Offices, and Private Repositories, have been ransacked for materials; aged worsted manufacturers, some of them upwards of ninety, have been questioned; and indeed no amount of labour has been neglected to render this work a full and reliable record of facts respecting the worsted manufacture. Where the multiplicity of particulars is so immense, the sources of information so numerous, and the memory of the informant often treacherous, it is not to be supposed that frequent errors or misconceptions will



not exist. I, however, dismiss this volume to the public in perfect confidence that it will, with every allowance, be received with favour, especially by the worsted manufacturers of the West-Riding of Yorkshire. Already they have conferred upon the Author a generous patronage by liberally subscribing for the work.

Whatever defects may be found in the volume must be attributed to myself, for it is the product of my own hand, except where acknowledged in the body of the work, and the portion respecting combing machines, which is from the pen of a Gentleman very conversant with the subject.

With the characteristic generosity of the wealthy worsted manufacturers of the West-Riding, three Plates have been presented to the Author, namely, the view of Saltaire, by Titus Salt, Esq., (who has also subscribed for twenty copies of this work :) the view of Halifax, by Edward Akroyd, Esq., M.P.; and the view of Dean Clough Mills, Halifax, by Messrs. Crossley, of that place.

So many have been the favours and aids I have received while preparing this work, that it is no easy task to duly acknowledge them. First and foremost I have to tender my thanks to Edward Hailstone, Esq., of Horton Hall, F.S.A., who not only introduced my name to the Worsted Committee as competent to write the work, but opened, without restraint, his splendid library to my use. From this library, certainly one of the best selected in Yorkshire, I have obtained a large store of particulars, and to the owner I am also indebted for many suggestions. To Mr. Edwards, the accomplished Librarian of Manchester Free Library—one of the Wonders of the Age—I owe much, for unusual facilities afforded me in consulting a collection of tracts on trade and manufactures, which I believe to be unmatched in the kingdom. The Directors also of Bradford Library have allowed me, in the most liberal spirit, access to their large and well-ordered collection of books.

To Henry Hall, Esq., the venerable and respected Chairman of the Worsted Committee for upwards of fifty years,—I am indebted for a most interesting Monograph on the worsted manufacture. From a Trade Diary kept by Charles Walker, Esq., I have obtained many valuable materials, in addition to the advice and assistance which he at all times has afforded me. Robert Baker, Esq., the Factory Inspector, has presented to me several tables, and has made many other additions to my work, which could not have been procured from any other source. A. W. Fonblanque, Esq., of the Board of Trade, has most courteously furnished me with tables of the export of worsteds. Likewise Alexander Redgrave, Esq., Factory Inspector, has readily afforded me assistance. Robert Milligan, Esq., of Bingley, has added to the value of this work by a most interesting contribution. I owe many thanks also to William Ecroyd, Esq., of Lomeshaw, for materials respecting the Colne district. Messrs. Dufay have kindly lent to me files of their excellent Trade Circular. My best acknowledgments are also due to Edward Akroyd, Esq., M.P., and John Crossley, Esq., for notices of the worsted manufacture at Halifax; to John Horsfall, Esq., of Mount St. John's, near Thirsk, for many curious notices respecting the manufacture in Bradford parish; also to the following Gentlemen for information:—S. C. Lister, William Garnett, Christopher Waud, H. W. Ripley, Thomas Crosley, and William Horsfall, Esquires, of Bradford: to Messrs. Joseph Holmes, John Milner, and John Anderton, of Bradford; Messrs. George Spencer, and John Whitworth, (Worsted Inspector) of Halifax. The latter Gentleman prepared for my use the returns of drawback on soap used in the worsted manufacture.

To all other Gentlemen who have in any manner afforded me assistance, or subscribed to this work, I tender my grateful acknowledgments.

*Bradford, June 1857.*



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# THE HISTORY

## OF THE

### WORSTED MANUFACTURE.

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#### CHAPTER I.

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#### INTRODUCTION.

Earliest Clothing of Man.—Spinning and Weaving very ancient Inventions.—Early allusion to them in the Sacred Writings.—Probably invented in Egypt.—Pliny's authority.—Spread among the Kingdoms of the Old and New World.—Surprising skill of the great Nations of Antiquity in the Textile Arts.—Four principal kinds of Raw Materials adopted for Clothing.—Wool supposed to have been first so adopted.—Worsted Fabrics probably preceded those of Woollen.—Want of distinction between them by the Ancients.—State of the Manufacture among the chief Nations of Antiquity.—Description of the Implements used by them in Spinning and Weaving.

MAN has two great natural wants—food and clothing. To supply the latter, he adopted, in the primeval ages, the skins of wild beasts,\* but as he progressed in civilization, he sought for artificial articles of clothing, uniting at once comfort and elegance. The ambition to possess beautiful garments, as the greatest of personal ornament, impelled mankind, from the first, with the strongest motive to exert their inventive skill and manual dexterity upon the textile arts. Hence they were soon brought to surprising excellence.

\* Gen., iii., 21.—“The ancient Greek Authors, speaking of the first ages of the world, assure us, that men killed the beasts of the field for their food, and clothed themselves with their skins.”—Strutt on Dress—Introduction.

That spinning and weaving are among the earliest arts known to man admits of no controversy: they are mentioned in the most ancient records extant. A beautiful simile occurs in the Book of Job,\* probably the oldest composition which has descended to us, in which the swiftness of life is compared to that of a weaver's shuttle; also in various parts of the Books of Moses allusions to these arts are made in such a manner as plainly to indicate that they were not recent, but considerably advanced towards perfection.†

Many of the nations of antiquity claimed the great honour of having invented weaving, but the claim of renowned Egypt, the cradle of the arts and sciences, stands upon the best foundation, and is now commonly allowed; Pliny writes that the Egyptians were the inventors,‡ and there are many concurrent reasons in support of this statement. The art of weaving has, however, been found among the nations of both the Old and New World. It will immediately be shewn, that the mighty nations of antiquity carried spinning and weaving to astonishing proficiency, and with the distaff and rudest loom seem to have equalled, if not surpassed, in fineness of fabric and delicacy of workmanship, even the woven manufactures of modern times. The Orientals have, doubtless, ever been famous for manual skill and delicacy of touch. Witness the productions of the simple loom of the Hindoo, rivalling with his Dacca Muslins, the fabrics from our wonderful spinning and weaving machines. But not only among the comparatively highly civilized nations of antiquity was the art of weaving extensively practised, but also by the less civilized

\* Job, vii., 6.—“My days are swifter than a weaver's shuttle.” The shuttle in the form now used was unknown in the days of Job; but this allusion is still apposite, for it applies to the instrument used for the same purpose by the Egyptians, as hereafter shewn, and, without doubt, also employed in the Country of Job, which adjoined to Egypt.—See the Notes to the Pictorial Bible, and Dr. Adam Clarke's Commentary on this passage.

† Gen., xxxvii., 3.—Ibid, xli., 42. Exod., xxxv., 25, 26, and 35. Levit., xiii., 47 and 48.—Ibid, xix., 19. Deut., xxii., 11.

‡ Pliny, vii., 56.—“The Egyptians put a shuttle into the hands of their goddess Isis, to signify that she was the inventress of weaving.”—Strutt on Dress. “Of the arts, Egypt was probably the mother of many, as she was certainly the nurse of most.”—Mitford's History of Greece, vol. 1, c. 1.



ones of the New World, and even by the most savage tribes of the earth.\*

There are four kinds of raw materials from which all civilized nations have principally formed their garments—wool, flax, cotton, and silk. Of these it has often been asserted, and is highly probable, that wool came first into use for such a purpose, as we know that sheep were in the earliest ages important objects of man's care; and the adaptation of the fleece to form threads for weaving would be obvious.† The manufacture from wool which we term 'worsted,' seems to have preceded that of 'woollen,' inasmuch as the fleece of the sheep in its primitive state appears to have been long, and thus would, in its nature, be suitable for the fabrication of worsted articles.‡ We have sufficient evidence to prove, that in the remotest ages, stuffs were manufactured from threads of wool woven with those of linen or silk, similar to the mixed worsted fabrics of the present day.§

It would be interesting, and give a more comprehensive view of the subject of this work, to inquire into and accurately note the state of the peculiar manufacture termed 'worsted' among

\* Clavigero, in his History of Mexico, Book 1, sec. 7, shews that the art of weaving had been, on the Conquest of Mexico, brought there to considerable excellence, and must have flourished from a very remote antiquity. It is found also among the Savage tribes of Central Africa.—See Park's Travels, p. 17.

† "Abel was a keeper of sheep."—Gen. iv., 2. It is shewn that the patriarchs Jacob and Esau had such large flocks, "that it was more than that they might dwell together."—Gen. xxxvi., 7. All Joseph's brethren were employed in feeding their father's flock in Shechem.—Gen. xxxvii., 13. In the days of his latter prosperity, Job possessed fourteen thousand sheep.—Job xlii., 12. Two eminent authorities, Whitaker, in his History of Manchester, and Strutt, in his work on Dress, assert, that articles of dress made from wool were introduced the earliest.

‡ The writer of the article on the Worsted Manufacture, in Rees' Cyclopædia, observes, "Long stapled wool suited to the comb, seems more spontaneously the produce of uncultivated sheep than short wool, which is to be manufactured by 'carding,' and hence that the manufacture of worsted goods preceded that of woollen ones. It has been conjectured by some writers, that the Argali species is the original sheep; but Dr. Carpenter, in his Zoology, states that this is not correct.

§ "A garment mingled of linen and woollen shall not come upon thee."—Lev. xix., 19. This proves, that webs made of linen and woollen threads were then known. Several of the Ancient Nations fabricated cloth from wool and silk; when the stuff was made of silk weft and woollen warp, it was termed "*subsericum*," by the Romans.

the ancients. But two difficulties arise in prosecuting such an inquiry: first, the prose writers of antiquity were almost wholly engrossed with wars, and grand events, or ethics, and considered the lowly arts of peace unworthy of their pen, or so well known as to require no observation. Hence it is surprising how little is mentioned in the ancient writers respecting any of the arts of life. The slight notices of spinning and weaving contained in such writers are mostly incidental, and even more uncommon than those of the other industrial occupations. Again, under the terms implying fabrics formed from wool, the ancients when alluding to them, indiscriminately classed the articles we now distinguish as worsted or woollen. Indeed, until a very recent period, this distinction was not attended to by authors when noticing articles manufactured from wool, and has very materially added to the difficulty of tracing fully and satisfactorily the progress of the worsted manufacture.

The following is, however, a very brief digest of all that can be collected, strictly applicable to the purpose of this work, respecting the manufacture among the ancients.

Although the staple manufacture of the ancient Egyptians consisted of linen (the produce of the fine flax grown on the banks of the Nile) yet they also fabricated stuffs from wool, which, for several reasons, we may conclude were similar to the worsted articles of the present day. For instance, there is a great similarity between the preparation of long wool and flax for making thread, which renders it probable that the wool-fabrics of Egypt were formed of threads of combed long-wool. It is obvious that the whole process in producing linen cloth approximates much more to that employed in the worsted than the woollen manufacture. The Egyptian priests are described as wearing a light vestment made from wool.\* It has been suggested, and with every probability of truth, that the "garment mingled of linen and woollen" forbidden by Moses, was a cloth which the Egyptians were accustomed to manufacture, inasmuch as he prohibited

\* "Linen and woollen garments were in use among the Egyptians at a very remote period."—Strutt on Dress.—Introduction.



almost every custom prevalent in Egypt, where the Israelites had long dwelt, and had but recently departed from it. Such a cloth must necessarily have been similar to our mixed worsted goods formed of cotton warp and worsted weft, and could not be felted. In most of the ancient nations spinning and weaving were altogether domestic employments; but the Egyptians resembled ourselves in this, that they possessed large weaving establishments, and supplied with their products foreign lands. Herodotus narrates that they employed men in weaving; a strong contrast to the manners of the rest of the world at that period.\*

The Hebrews, it has been conjectured by some, obtained in the days of their bondage under the Egyptians a knowledge of spinning and weaving;† but the better hypothesis is, that Abraham brought these arts with him from his native land, Chaldea, where, transplanted from Egypt, they flourished in the remotest times. In the latter country the Israelites, no doubt, would acquire considerable skill in making cloths of various kinds. We read that, while journeying in the desert, “the women that were wise hearted did spin with their hands”‡ both of linen and wool, and that cloths of both materials were woven. The Hebrews, however, were never distinguished for their skill in any of the manufactures—being in their avocations a purely pastoral and agricultural people.§ They had large flocks of sheep, and the fleece would assuredly be formed into clothing. The coarser articles of dress were spun and woven by them, as in all countries in a primitive condition, under the domestic roof; for we find in the Proverbs of Solomon a very

\* For the statements in this paragraph see—Manners and Customs of the Ancient Egyptians, by Sir Gardner Wilkinson, vol. 3, p. 33; Historical Researches into the Politics, Intercourse, and Trade of the Carthaginians, Ethiopians, and Egyptians, by A. H. L. Heeren, translated from the German, vol. 2.—*Oxford*, 1838; Ancient Egypt under the Pharaohs, by John Kenrick, M.A., vol. 1, p. 216; Herodotus, vol. 2, p. 35, who states, that the Egyptian women went to market and engaged in business, while the men, shut up in the house, worked at the loom.

† Horne’s Introduction to the Study of the Holy Scriptures, vol. 3, p. 395.

‡ Exodus, xxxv., 25.

§ Horne’s Introduction to the Study of the Holy Scriptures. Strutt’s Introduction on Dress.

elaborate and charming picture of the habits of a good wife of Israel, which plainly indicates that, at least, every mistress of a large family superintended, under her own roof, the making of cloth from flax and wool for the use of her household.\* But it is evident that even in the reign of Solomon, when it may be presumed the arts flourished most, they were even then in a low state among his subjects, because a foreigner had to be procured skilful enough to superintend the manufacture of decorations and fittings for the Temple, from the linen yarn and other articles obtained out of Egypt and the surrounding countries.† The fact of such yarn having to be procured from another country, famous for the fineness of its yarn, is a sufficient indication of the inability of the Israelites to produce it of the requisite quality. That they did not manufacture any article, either woven or otherwise, for foreign trade may be gathered from the curious summary of the commerce of the East, contained in the twenty-seventh chapter of Ezekiel, where among the merchandise brought by them to the fairs of Tyre, are enumerated wheat, honey, oil, and balm only, the produce of their soil.‡ The clothing adopted by them was a tunic of linen cloth worn next the body, over the tunic a large vest or upper garment made of wool, and a girdle which is stated by writers on the manners and customs of the Hebrews to have been worsted. In no part of the world does the dress remain so much without change as among the people of the East, and Dr. Shaw in his *Travels*§ states, that their girdles are usually of worsted very artfully woven into a variety of figures. We may justly infer that the girdle mentioned in the thirty-first chapter of Proverbs was of this kind, and that the worsted manufacture, in a rude state at least, was known to the Hebrews.

The Babylonians became famous for their manufacture of

\* Prov., xxxi.—“She seeketh wool and flax, and worketh willingly with her hands.” “She layeth her hands to the spindle, and her hands hold the distaff.” See also the following verses. Compare the character of Penelope in the *Odyssey* with this description.

† 1 Kings x., 28. 2 Chron. ii., 14. This foreigner was sent by Hiram, King of Tyre, a city famous for its textile manufactures.

‡ Ezek. xxvii., 17.

§ Shaw's *Travels*, p. 409.



stuffs from the finest description of wool. “They wear,” says Herodotus, “a gown of linen flowing down to the feet, over this an upper garment made from wool, and a white tunic of the same material covering the whole.”\* As the climate of Babylonia is excessively hot, we may conclude that these garments woven from wool, were similar to some of our worsted ones, light and of delicate texture. Babylon, the most celebrated mart of ancient commerce, was distinguished for the extent of its trade, and especially for the productions of its looms. Large and numerous weaving establishments were not confined to the city, but scattered through the towns of the province, and their woven stuffs conveyed to all the countries of the East. Babylon was emphatically a city of strangers—a continual influx of foreigners crowded its streets. It possessed no local advantages except its central situation, even the wool and other raw materials of its manufactures were supplied by distant lands. But the skill, industry, and enterprise of its inhabitants were unrivalled: the productions of their looms of so fine a texture as to be held in great estimation in all the marts of the world. If we may place implicit belief in the accounts which have descended to us respecting the fineness of their cloths, they were even superior to the extraordinary fabrics of modern skill.†

The particular materials adopted by the Assyrians for their apparel cannot be ascertained, but the magnificence of their long and flowing robes passed into a proverb. Layard assumes that they were of the same fabric as those of the Babylonians, namely, some of linen and some of wool. From the wonderful discoveries made by him at Nineveh, we find that the Assyrian robes were richly embroidered and dyed with brilliant colours.‡

Another of the notable nations of the East, the Phœnicians,

\* Herodotus, Book 1, c. 195.

† Heeren's Historical Searches into the Politics, Trade, and Intercourse of the principal Nations of Antiquity, vol. 1, p. 417.—*London*, 1851.

‡ Layard's Nineveh, vol. 2, p. 319, *et seq.*:—He adds, “The materials of the Robes of the Assyrians, like those worn at a subsequent period by the Babylonians, one may have been of linen, and the other of wool. They were richly embroidered and dyed. The designs upon them were most elaborate, consisting of figures of men and animals, flowers and various devices.”

early distinguished themselves by their manufactures from wool, which were much esteemed for their fineness and beauty of workmanship. The Prophet Ezekiel alludes to the 'white wool' brought from Damascus to the fairs of Tyre;\* and the Phœnicians, being the most skilful dyers of antiquity, dyed it we are informed, previously to putting it into the hands of the spinner. "It is to be regretted," observes Heeren, "that history which so celebrates the garments and woollens of this city [Tyre] has preserved us no distinct information respecting them.†"

The textile fabrics of both the Greeks and Romans were almost entirely of wool. They wore very little linen or cotton cloth, and adopted silk sparingly as an exceedingly costly article of dress.‡ They had two kinds of woven stuffs from wool: the one resembling our woollen cloths, napped and felted; and the other similar to our worsted ones, threadbare (*trita*). The latter would, doubtless, be worn by both nations as being lighter and more congenial to the warmth of their climate. Weaving was carried on by them in two modes—one by a separate class of persons (*textores*) as a distinct trade, who particularly supplied the inhabitants of towns with the productions of their skill, the other as a domestic manufacture. Every considerable house, especially in the country, contained a loom together with the apparatus for preparing the wool. When the domestic establishment was ample, a portion of it specially set apart for this purpose, was (like that of the Hebrews) under the superintendence of the mistress of the house, who with her daughters and servants took part in the labours of

\* White wool seems eminently to have been in great request; it has been supposed, that the fleece of the original sheep was black or brown.

† Heeren's *Searches into the Politics, Intercourse, and Trade of the principal Nations of Antiquity*, vol. 1, p. 36. Homer, in the *Iliad*, ascribes preeminence in the textile clothing arts to the Phœnicians, of which Tyre was one of their cities. Phrygia and Lydia were also celebrated for their skill in these arts.

‡ "The dress both of the Greeks and Romans was almost entirely woollen, which, by their frequent use of the warm bath, was rendered abundantly comfortable. Their consumption of linen and cotton cloths was much inferior to that of modern times, when these are worn by persons in every rank of life."—Robertson's *Dissertation on Ancient India*, sec. 2.



working the wool into cloth.\* These occupations of the women give occasion for many affecting incidents and allusions in the Greek and Roman writers.† Although the manufactures from wool by the Romans were chiefly for domestic use, yet we learn that they exported to the East a light kind of wool fabric resembling worsted.‡ Isidore and others§ mention the dilution, by the Romans, of the threads of wool to render the finer sort more firm and worsted like.

There is ample proof that the Romans were well acquainted with the manufacture of wool into worsted cloth ; for scattered through their works are numerous passages which cannot convey any other meaning. In one of these it is mentioned, that to produce a thin kind of stuff from wool, the thread must be finely twisted, as in worsted. (*Lacernæ nimia subteminum tenuitate perfabiles*. Amm. Marcell. xiv., 6.) The *toga*, the ordinary upper dress of the Romans, is distinctly alluded to in their writers as being of two kinds ; the one the *toga densa*, *pinguis*, or *hirta* (Suet. Aug. 82.—Quintil. xii., 10) to which is opposed the *toga trita* or *rasa*, which was a summer dress (Martial ii., 85).

The learned reader, who desires to further investigate this subject, will find a multitude of authorities, and much curious information, shewing that the greater portion of the Roman vestures were formed from wool, and were of two kinds, (the

\* See Dr. Smith's very valuable Dictionary of Greek and Roman Antiquities, Article "Tela."

“ It was customary in the heroic age, as indeed at all times in Greece, for Ladies “ of the highest rank to employ themselves in spinning and needlework, and in, at “ least, directing the business of the loom ; which was carried on, as till lately, in the “ Highlands of Scotland, and among the Yeomanry in many parts of England, by “ every family, or its servants, for itself. It was praise equally for a slave and a “ princess to be skilful in works of this kind.”—Mitford's History of Greece, vol. 1, p. 159.—London, 1835.

Homer, in the Odyssey, speaking of the maid servants of a large establishment, says, “ some ground at the mill, and some turned the spindle or threw the shuttle.” Penelope's web will readily occur to the reader.

† Thus Creusa proves herself to be the mother of Ion, by describing the pattern of the shawl she had woven for him (Euripides.) Iphigenia recognises her brother Orestes, on one occasion, (Euripides) and Electra on another (Eschylus) by the figured clothing which he wore, and which they had long before woven for him.

‡ Arrian's Circumnavigation of the Red Sea.

§ Quoted in Fosbroke's Dictionary of Antiquities,—Article “ Loom.”

one resembling our worsted stuffs) in *Ferrarius de re vestiaria* printed in Grævius' *Thesaurus Antiquitatum Romanarum*.

Even in India, which, from the remotest period, has been distinguished for the extent and perfection of its cotton manufactures, a species of worsted article was in use, for in the *Ramayana*, a very ancient book of the Hindoos, it is stated, that a princess presented to her father some fine woollen stuffs,\* which it is probable were shawls similar to those of Cashmere. Ancient history notes that in the mountains of Northern India, especially the vicinity of Cashmere, there ranged large flocks of sheep of a peculiar breed, the fleeces of which constituted the wealth of the inhabitants.† These fleeces were worked into shawls and other delicate textures, similar to those of Northern India of the present day, and may be classed as worsted productions.

Materials for garments, either in the raw or manufactured state, have always been the most important articles of exportation from the East. In a curious and comprehensive account of the commerce of the Ancient World, written not later than the second century,‡ cloths of great variety manufactured from wool, are mentioned as being exported by way of the Red Sea; but for want of technical precision in naming them, we are unable to ascertain, with any degree of certainty, of what kinds they consisted, beyond this that some of them are stated to have been of light and delicate make, and therefore similar to our worsted fabrics.

Sufficient has been stated to shew, that manufactures from wool formed a large portion of the weaving occupation of the Ancient World; and that, no doubt, the worsted manu-

\* *Ramayana*, Book 1, p. 605, quoted in Heeren's *Searches*, vol. 2.

† "Herodotus (3. 113.) has given us a description of the Arabian Sheep. In the mountains also of Northern India, the district of Behn, or the vicinity of Cashmere, were found then, as at present, large flocks of sheep, which constituted the wealth of the inhabitants."—Heeren's *Searches* into the Politics, Intercourse, and Trade of the principal Nations of Antiquity, vol. 1, p. 41.

‡ Arrian's *Periplus Maxis Erythrei*, the Circumnavigation of the Red Sea, performed in all probability during the first, or at all events, during the second century. The work itself, which is usually attributed to Arrian, commemorates the voyage of a certain Merchant from Egypt to the Western coast of the Indian Peninsula, and gives valuable information respecting the commerce of those parts.



facture existed among the Egyptians, Hebrews, Babylonians, Phœnicians, and the other nations of antiquity. Indeed, it will upon reflection appear certain, that at all periods of the manufacture from wool, both branches of it—the woollen and worsted—were cultivated. It must, however, be confessed, that the information which can be collected on this subject, is meagre and somewhat vague; but this difficulty has been observed by all writers who have treated on the clothing arts of the ancients. An eminent author, speaking of several branches of the trade of the Ancient World, proceeds:—"It is a much more difficult, but at the same time important point to ascertain the various materials for clothing which were known to the East; but the expressions employed in passages by ancient authors on this topic are not so technically accurate as to enable us to determine with certainty the articles meant; at the same time, some of the most important questions respecting Asiatic commerce depends upon our interpretation of these passages."\* This difficulty is immediately observed, when these authors allude to cloths made from wool.

Having briefly reviewed, with what precision the subject will admit, the state of the worsted manufacture in the earliest ages, it will satisfy curiosity to describe the implements of spinning and weaving then in use.

All the nations of antiquity employed the distaff in spinning. We have no certain knowledge of the peculiar form of distaff and loom adopted by any of the very ancient cloth manufacturers, except the Egyptians; but it is supposed that these implements were the same among all the contemporaneous nations, and a description, therefore, of the Egyptian distaff and loom will suffice for those of all the others. The yarn of the Egyptians appears to have been wholly spun with the hand. In the representations upon their monuments, the operation of spinning is seen to be performed with the spindle; and as a curious testimony of the unchangeable character of the customs of the East, is of the same form as that now in use

\* Heeren's *Searches, &c.*, vol. 1, p. 36.

in Egypt. "To obtain the advantages of a longer cast, the spinner is raised upon a stool, or the thread is passed over a forked stick. Some are drawing a single thread from two others, uniting two or more threads into one."\* Several of these spindles have been found at Thebes of about one foot three inches in length. They are mostly of wood, and for the purpose of giving an impetus in twirling them, the circular head is weighted with gypsum or some composition. A peculiar kind of spindle has also been discovered of light plaited work, formed of rushes or palm leaves, and having a loop for securing the thread after it was wound. The hieroglyphics of a word signifying in Coptic 'to twist,' is always found over the ancient Egyptian representations of persons employed with the spindle.†

The Egyptians, it is clear, had two kinds of loom—one horizontal, the other perpendicular. The shuttle, in the form of the present day, was unknown to them; but, instead thereof they used a stick, with a hook at each end, to pass the thread of the wool through the warp, and probably to act as the batten, for they had no slay or batten such as ours. "The use of treadles was also unknown, and the threads of the warps are kept apart by sticks."‡ Herodotus mentions, as one of the peculiarities of the Egyptian method of weaving, that, contrary to the custom of other nations, they pushed the weft downwards; and this is shewn in many of the paintings depicting their method of making cloth: but it appears from a representation found at Thebes, of a man employed at weaving, that he pushes the weft upwards. It is, therefore, sufficiently evident, that on their perpendicular looms they employed both methods, according to different kinds of work, of pushing the weft upwards and downwards; but that the one mentioned by the historian was, it is probable, the most prevalent. The horizontal loom, however, appears to have been the oftenest in use. On the tomb of Beni Hassan, there is a beautiful representation of a weaver at work with a horizontal loom. "It is

\* Kenrick's Ancient Egypt, vol. 1, p. 216.

† Wilkinson's Manners and Customs of the Ancient Egyptians, vol. 3, p. 133.

‡ Kenrick's Ancient Egypt, vol. 1, p. 216.



Fig. 1.

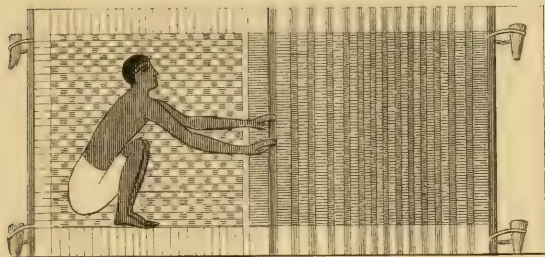


Fig. 3.

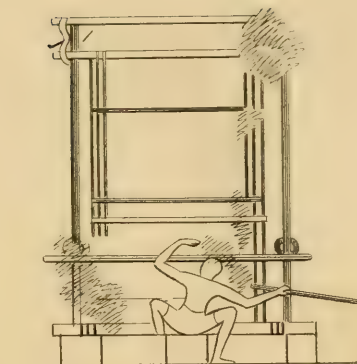


Fig. 4.



Fig. 2.

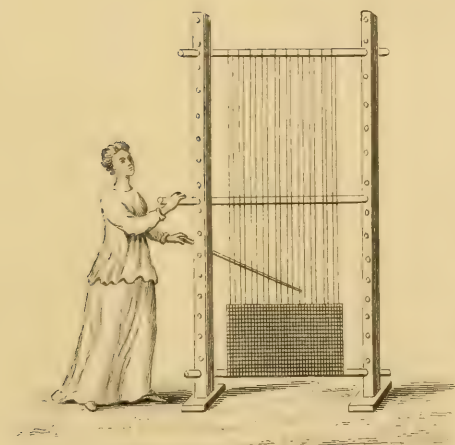


Fig. 5.



Fig. 6.

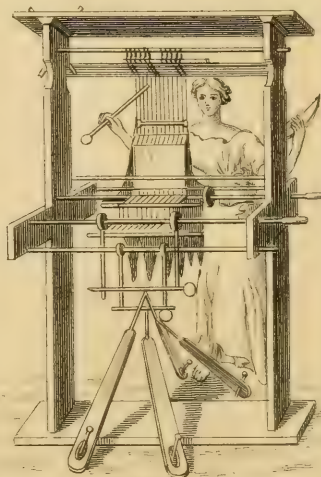


Fig. 7.



Fig. 8.



Fig. 9.

COLLEGE OF LIBERAL ARTS  
LIBRARY



“fastened to four pegs pushed into the ground, and the workman sits on the part of the web already finished, which is a “small chequered pattern of yellow and green.”\* This loom bears a strong resemblance to the one now, and for ages past, employed by the Hindoo weaver.†

Wilkinson gives, in his work on the Ancient Egyptians,‡ drawings of the distaffs and of two looms used by them, which have been engraved for this volume, (*see first Plate*) and will convey a tolerably accurate idea of the apparatus used for spinning and weaving throughout the ancient world. The first of these two looms is a perpendicular one; but the woman employed at it is sitting to her work. The second loom has apparently been copied from Minutoli, and is the one above described, where a man is employed in weaving chequered work.

It is evident from what has been stated that the implements used by the early Egyptians, and also by the other contemporaneous nations, (as there is little doubt these employed similar ones) were extremely rude, and we are unable in no other manner sufficiently to account for the extraordinary beauty and fineness of their textile productions, than by attributing them, as in the cotton fabrics of India, to the dexterity acquired by long traditionary habit and by great delicacy of hand.

\* Minutoli, plate 34, vol. 2,—quoted in Heeren’s Researches.

† The following is a description of the Hindoo loom :—“The loom consists merely of two bamboo rollers; one for the warp, and the other for the web, and a pair of geer. The shuttle performs the double office of shuttle and batten, and for this purpose is made like a huge netting needle, and of a length somewhat exceeding the breadth of the piece. This apparatus the weaver carries to a tree, under which he digs a hole large enough to contain his legs, and the lower part of the geer. He then stretches his warp by fastening his bamboo rollers, at a due distance from each other, on the turf by wooden pins. The balances of the geer, he fastens to some convenient branch of the tree over his head; two loops underneath the geer, in which he inserts his great toes, serve instead of treadles, and his long shuttle, which also performs the office of batten, draws the weft through the warp, and afterwards strikes it up close to the web.” Martin’s Circle of the Mechanical Arts, p. 239, quoted by Baines, in his History of the Cotton Manufacture, where he observes, it is probable this loom has been in use in India for several thousand years.

‡ He gives, vol. 3, p. 134, a view of the horizontal loom, and another of the upright loom, p. 135.

The apparatus for spinning and weaving employed by the Greeks and Romans (nations much less ancient than the preceding ones) were in the first periods of their history, similar to those above described. For instance, the distaff was used by them, and their first loom seems to have been almost of the same construction as the perpendicular one of the Egyptians. The Romans, when they had advanced somewhat in the arts, were accustomed to use two kinds of loom—one of the ancient form, the other much improved, and not very dissimilar, in many of its parts, to the modern machine. In the splendid volumes of Montfaucon's "*Antiquity Explained*," there is a representation of these two looms which will be found engraved in the first Plate of the present work. The simple one is from a picture of Circe's loom contained in an ancient manuscript of Virgil's *Æneid*, supposed to be of the fourth or fifth century, preserved at Rome, in the library of the Vatican.\* In both these looms the threads of the warp are in a perpendicular direction instead of the present horizontal mode. The treadles of the second loom are on each side of it—there is no swinging beam with slay or comb to divide the threads of the warp, and press close the weft. The woman

\* The following is a translation from Montfaucon's "*L'Antiquité Expliquée*," vol. 3, c. 8, on this head:—"From the few monuments which we possess of ancient weavers, it is not easy to form a distinct idea of the manner in which they made their cloths of wool, or their linens. It seems, from figures which remain to us of the fourth or fifth century, they worked at their art with much simplicity. We have some women who are spinning with others who are weaving; those, who make the linen, or the cloth of wool, are standing. In the ancient Virgil in the Vatican, which is believed to be of the fourth century, and which formerly belonged to our Monastery of St. Denis, in France, which I have shewn in my Journal on Italy, we see a woman who works at a piece of linen or stuff; and this woman, who is standing, instead of a shuttle, makes use of a long staff. I leave those expert in this art, to reason on this manner of working in linen, or in cloth of wool. Another Manuscript of the King's Library, which is a Commentary upon the Book of Job, shews us a weaver who works at a stuff. The latter is also working standing. Although this Manuscript is of the tenth century, the figures in it are drawn from MSS. more ancient: for, as it is said in an ancient Commentary, the oldest specimens of Job had these images depicted, which had been transmitted in the subsequent copies." These are the observations of Montfaucon upon the plate in his work, containing a representation (which was taken from Ciampini) of the above mentioned two looms.



employed in weaving holds in her left hand a boat-fashioned shuttle, and in her right a long staff to serve as a batten.

So uniformly was the warp placed in an upright position that the Latins termed it *stamen*, to be erect; and the corresponding word in Greek has the same meaning. We gather from the Latin writers, that in their looms they had the transverse beam or *jugum* from which the warp depended. The warp was divided into two parts by a straight cane (*ariundo*) passing through the warp. In plain weaving it was inserted between the threads of the warp, so that the threads on one side of the rod alternated with those on the other side through the whole length of the warp. The warp being thus divided into two sets of threads, each was passed through a corresponding set of leashes. At least one set was necessary to separate or decussate the warp in the plainest weaving, and as the pattern became more intricate the number of leashes was increased. They used, for the batten or slay, an instrument held loose in the hand called a *spatha*, formed like a wooden sword to drive the weft home. It is probable that they employed the simpler loom for plain work with one thread, and the other for intricate patterns; for they had a great variety in some fabrics as well as several sorts of work in the weaving trade.\*

There are four essential parts in the modern loom, namely,—the contrivance for stretching tight the threads of the warp;—the leashes or heddles for dividing such threads to allow the weft to be passed through;—the slay for beating home the weft when so passed;—and the shuttle. Of these the Roman loom had only attached to it the two first parts,—the warp stretcher, and the leashes. Their batten, as before mentioned, was a loose stick or wooden sword, and the shuttle was also distinct from the loom, and thrown by the hand through the warp as was the practice even in modern times, namely, until the middle of the last century. The loom now employed in Iceland, is of a similar form to the improved loom of the highly civilized Romans.

In the earlier ages, throughout Europe women alone were

\* The particulars in this paragraph are taken from Fosbroke's Dictionary of Antiquities, and Dr. Smith's Dictionary of Greek and Roman Antiquities.

employed at the loom ; but in the fourth century weaving was in part transferred to the men, which St. Chrysostom deploras as a mark of the sloth and effeminacy of the age.\*

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Such was the state of the manufacture, and the spinning and weaving implements used in the Ancient World down to the period of the dismemberment of the Roman Empire. It is evident from the descriptions which have descended to us, that the various branches of the manufactures from wool cultivated by the ancients, had been brought, in beauty and variety of fabric, to a high degree of excellence. The most celebrated nations of antiquity were enriched by these manufactures, and they formed then, as now, a large portion of the commerce and industrial wealth of the world.

How changed ! The Genius of woven manufactures deserting its great and magnificent seats in the East, journeyed to the Isles of the far West, to a spot which, when Babylon flourished as “a city of merchants,” was a waste, and fixed there, in company with freedom, commerce, and literature, its favourite retreat—whilst the great City of the Euphrates is desolate, and its very site a question for the antiquary !

\* Orat. 34.



## CHAPTER II.

## HISTORY OF THE MANUFACTURE DURING THE MIDDLE AGES.

Flourishing state of the Manufacture in Constantinople and the East.—Its Rise and Progress in Italy.—Greatly promoted by the Religious Orders.—Florence renowned for the Fabrication of Clothing from Wool, so early as the thirteenth century.—Venice traded with Constantinople for Woollens and Worsteds.—Afterwards a great depot for these Articles.—Mohair made in Italy about the Year 1420.—Early Establishment of the Manufacture in the Netherlands—Principal Mart for Cloths and Worsteds at Bruges.—Decline of the Trade from the Commotions in the Low Countries, and afterwards from the Persecutions of Philip II.—Gaul celebrated under the Roman Emperors for its Manufactures from Wool.—Under Charlemagne.—Low State of Manufactures in France.—Principally supplied by the Flemish.—Spain in the Middle Ages distinguished for its Worsted Fabrics.—The Moors of that Country expert Weavers.—Curious Particulars respecting the Ancient Manufacture in Barcelona.—The Manufacturers of that City very celebrated Makers of Worsteds.—On the Conquest of South America the Clothing Arts declined in Spain.

ON the downfall of the Roman Empire, arts and literature were alike swept away from Western Europe by the victorious barbarians; and its clothing arts, especially in a cultivated and decorative form, became nearly extinct. In truth the Romans had never been much celebrated in the ancient world for their skill and taste in these branches of industry, so that during the latter periods of the Empire, and for some centuries after its dismemberment, Constantinople, as the capital of the Eastern portion, became the seat of excellence in every species of woven manufactures. Owing to the happiness of her situation, the industry and ingenuity of her people, the patronage and presence of the Emperors, the constant influx and reflux of foreigners, bringing with them the productions and improved arts of their own countries, Constantinople stood

at the head of the civilized world. Dr. Robertson, in his felicitous language, observes, that it “was the greatest as well “as the most beautiful city in Europe, and the only one in “which there remained any image of the ancient elegance “in manners and arts.” But what is more to our purpose, he also notes “that manufactures of the most curious fabrics “were carried on in its dominions.”\*

For several centuries after the sack of Rome, the woollen, worsted, and silk handicrafts were still practised to a large extent throughout the whole of the Eastern Empire; and even long survived its wreck. Here indeed was the original seat of the worsted manufactures, where from the most remote times they had, without intermission, been carried on by artizans, who for manual dexterity and skill were, in all periods, distinguished among the most expert weavers; and who peculiarly excelled in producing worsted articles of great delicacy of structure, and beauty of finish and colour. Throughout the early periods of the Christian Era, the Greeks were notable for the variety and beauty of their manufactures from wool. A distinct account of these so early as the tenth century has been transmitted to us.† While the Saracenic Empire lasted, the clothing arts were, in all their branches, carried to great excellence both in spinning and weaving, as well as in the dyes imparted to their fabrics. The productions of the looms of Bagdad, Damascus, and other of the great oriental manufacturing cities, were eagerly sought for and purchased at great price during the middle ages.

Nearly every vestige of civilization in classic Italy was destroyed by the Goths in the fifth century. After a succession of dark and dreary ages, the deluge of barbarism, which covered the face of society in the West, gradually subsided, and commercial enterprise began to revive. Many free cities arose in Southern Italy. Naples, Amalfi, and other of the maritime cities of Italy became independent states, began

\* View of the Progress of Society in Europe, prefixed to the History of Charles V. Gibbon, also, in his great work, gives a glowing description of the riches and prosperity of Constantinople for many ages.

† Muratori's *Scriptores Rerum Italicarum*, vol. iii, part 1.



to trade with the Levant and Constantinople, and brought home the precious productions of the looms of the East, together with the art of fabricating the finer descriptions of worsted goods. But these importations were on the whole insignificant, until the time of the Crusades, when the constant intercourse with the East rendered all its productions and manufactures familiar to the comparatively barbarous nations of the West.

It is impossible to overrate the important results to Western Europe arising from the Crusades. On the return of the adventurers engaged in those fanatical expeditions, they brought home with them the knowledge and arts of the mysterious and fruitful East, and gave to them a mighty impulse, such as the world had never before witnessed.\*

Prior to the thirteenth century the arts of manufacturing cloths and stuffs began to evince signs of new life in Italy. Denina in his able work on the Revolutions of Italy, gives the most correct account to be met with, of their early existence and progress in that country. He states, "We know, not by conjecture or dubious reports, but by well founded testimonies, that in all or most of the cities of Italy they manufactured woollen cloth in very great quantities and with great profit."† To the honour of the religious orders let it be said, that these arts were greatly indebted for their prosperity to the monks and friars, who (unlike their successors in more degenerate days) desiring neither to possess estate, nor live in idleness, nor by begging, thought of providing for their own sustenance by some useful labour or employment, and devoted themselves particularly to the fabrication of stuffs from wool. It is certain that by their means "the art was improved, perfected, propagated, and spread, not only in the state of Milan, in which houses were established for them for its practice and improvement; but also in all Lombardy, Tuscany, Romagna, as well as in every other

\* Mill's History of the Crusades, vol. ii., p. 346.

† Denina, *Delle Rivoluzioni d'Italia*. (Book xii., chap. 6, pages 368—371, Milan, 1820.)

“part of Italy,” where the ingenuity of the manufacturers rendered this art of great utility and almost universal.\*

Some friars, of the Order of St. Michael, of Alexandria, commenced even before the year 1249 to exercise in Florence the art of fabricating clothing from wool, and after the year 1250 were established in commodious lodgings, so that the citizens might work with them and learn the art; and very speedily the manufacture became there a great staple trade.† Villani, in his History of Florence‡ says, the factories or shops for manufacturing fabrics from wool (*Le Botteghe dell' arte della lana*) numbered in 1340 more than two hundred, producing from seventy to eighty thousand pieces, of the value of more than 1,200,000 florins in gold; and that a third of the amount remained in the country for labour, without taking into account the profit of the manufacturers. He adds, “by that labour were supported more than 30,000 persons,” who obtained their livelihood by this branch of industry. We also find from him, that thirty years before, there were about three hundred factories, the yearly produce of which was one hundred thousand pieces, but being coarser were consequently only half of the value of the above; because, at that time English wool was not imported, neither did they (the Florentines) know how to manufacture it as they did afterwards. Nor were other towns backward in taking advantage of the industry and charitable instruction of those humble and pious men, as testified by the decrees which were issued in Rimini, in 1261, and in Perugia, in 1279.§

Florence, seated advantageously and in a happy climate, attained under the administration of its illustrious Merchant Prince, Lorenzo de Medici, to an almost unexampled state of affluence. Her artizans were especially employed in the manufacture of clothing, in the finer kinds of which they were noted during these periods. It was “a city abounding with the richest manufactures, and in which the luxury of dress was carried to the greatest height.” Even so late as the days of Henry VIII., the finest of apparel was imported

\* Denina as before. † Ibid.

‡ Istorie Fiorentine lib: xi. cap. 93.

§ Denina as before.



from Florence. In 1560, Guicciardini mentions, in his description of the Low Countries,\* that among other commodities Florence sent to Antwerp fine shalloons, then named rasses.

As the Florentines were thought to be generally the most skilful and industrious, we may easily believe that the same was in proportion more or less the case with the other towns of Tuscany or Romagna, particularly with those in Lombardy, where the art of cloth manufacture began sooner to flourish than elsewhere, by means of the humble and pious friars, by whom it was spread in other parts of Italy.

Among the Italian cities engaged in the manufacture or merchandise of woollen and worsted, Venice stands pre-eminent. In the earliest periods, she traded with Constantinople for the best of these articles. On the sack of that city by the French and Venetians in the beginning of the thirteenth century, the latter carried away its arts and manufactures and established them in Venice. The historian of that Republic relates "that it was from Constantinople that the Venetians "took the first models of their manufactures."† Notwithstanding that large quantities of woollens and worsteds were produced in Venice and the environs, yet it was more distinguished, along with Bruges, in the early and middle ages as the depot or general warehouse of woven goods for the whole world, than for its own manufactures; for the merchants of Venice were the great carriers of Europe, and trafficked largely in this kind of merchandise. Although the description given in 1421 by the Doge Tommaso Mocenigo, of the magnificence and commerce of Venice must be taken with some allowance it undoubtedly in the main conveys a correct picture, "What city" says he, "is there on the face "of the earth that has a greater concourse of foreigners, who "come hither partly for the benefit of living securely in this "free and blessed country, and partly for the sake of commerce. Hence is Venice plentifully supplied with all sorts "of merchandises and manufactures, whence the riches of

\* *Descrittione d tutti i Paesi Bassi*, (Antwerp 1588.)

† *Duru's Histoire de la Republique de Venise*. 8 Tom : (Paris 1821.)

“her citizens are continually increasing, and our Republic  
 “receives a greater revenue within the compass of this city  
 “only, than many kings from their whole kingdoms.”\* Venice,  
 thy greatness has departed! but how applicable is this descrip-  
 tion to the metropolis of England!

Besides 19,000 pieces of cloth sent from Florence about this time, there were carried to Venice 90,000 pieces of woollen cloth from the cities subject to the Duke of Milan, of which Milan furnished only 4,000 pieces; Monza 6,000; Pavia 3,000; Alexandria, Torlona, Novara 6,000; Brescia, Como, Farina, Cremona, the same. These were shipped to Greece and all parts of the East. Duru writes that the fabrics of clothing produced by the Venetians, and for which they drew their wool from Spain and England, supplied the demand of all the Levantines. The materials for this sort of manufactures were exempt from all customs, as were also the exports of the cloths.

Padua was also a noted manufacturing city of Italy: when conquered by Venice it was stipulated in the act of taking possession, that its university and manufactures from wool should be preserved.†

For all these manufactures from wool in Italy, the materials of the finer descriptions were obtained from England, and of the coarser ones from Spain. Between the former country, and Florence, and Venice, an immense traffic was sustained. The Italian merchants were the bankers to all Europe, and of them the kings of England borrowed large sums of money, and pledged, as security, the future year's produce of English wool, and appointed these merchants, collectors for the exchequer of their customs.

At an early period it is certain the manufacture of mohair had been introduced into Italy. Speaking of about the year 1421, Denina writes,—“I also find that they manufactured  
 “in Perugia certain stuffs of the she-goat hair or mohair and  
 “they called them, as I think they still call them, *Baracani*.

\* Guicciardini's History of Italy, translated by Goddard, vol. iv., book 7.

† Duru as above quoted, book xi., 28. Sismondi's Italian Republics, book xii., chap. 91.



“These stuffs were in great demand in the southern countries, and they were generally sent to Castel di Castro, called Cagliari, a very celebrated place and seaport at that time, frequented by the Sardinians. By which we are shown how and in what manner the people of Italy endeavoured by their skill to employ usefully the hair of various animals, or any other thing, which was imported from Africa or any part of the world, and consumed in Italy.”\*

Besides the cloths and stuffs manufactured in Italy, its trading cities brought large quantities of foreign cloths and stuffs in an unfinished state, which were improved by some new apparatus of dyeing, or by some other skill for the improvement of their condition. And that part which was consumed in Italy was not only not injurious to its commerce but rather advantageous and profitable, because as they manufactured cloth of the choicest quality in Italy, they brought the best prices, consequently turned better to their account than to that of the foreigners, and therefore these goods which were finished in Italy, were largely exported.†

Throughout the early history of Europe, the inhabitants of the Netherlands, especially those of Flanders, Brabant, and Hainault, took the lead among manufacturing nations. At a very remote period, certainly so early as the tenth century,‡ the woollen and worsted manufacture had been transplanted thither from Italy. An authentic account of the commencement of these branches of industry in Flanders is contained in De Witt’s “Interest of Holland,” where he observes that “about the year 960, or rather sooner, the woollen manufacture of Flanders and other parts of the Netherlands, which made so great a figure for six succeeding centuries, took its rise.” “There were,” he continues, “until now

\* Denina as before quoted.

† Ibid.

‡ Hallam in his ‘View of the State of Europe during the Middle Ages’ has the following passage, corroborative of these statements. “The only mention of a manufacture as early as the ninth or tenth centuries that I remember to have met with, is in Schmidt, (*Hist. des Allem.* t. ii. p 146,) who says that cloths were exported from Friesland to England. He quotes no authority, but I am satisfied that he has not advanced this fact gratuitously.” Vol. 3, p. 313.

“scarcely any merchants in all Europe, except a few in the “republics of Italy, who traded with the Indian caravans of “the Levant. That the Flemings being the nearest to France “were the first that began to earn their living by weaving, “and sold the produce of their labours in that fruitful land, “where the inhabitants being able not only to feed themselves, but also by the superfluous growth of the country “to put themselves into good apparel.”\*

The Flemish historian (Meyer) also ascribes the origin of the manufacture in Flanders to Baldwin the young, third Earl, in the year 958.† To encourage the woollen and worsted trades he established annual fairs or markets at Bruges and other places, free of toll, either for goods exported or imported. It is related that his father Arnold, being old, resigned in favour of his son, who thereupon invited over into Flanders all manner of handicraftsmen for making these cloths and stuffs, and granted them great immunities.

Speaking of the commerce of the Baltic, and the German and Atlantic oceans, Hallam justly remarks that it “was first “animated by the woollen manufactures of Flanders;” and adds, “It is not easy either to discover the early beginnings “of this, or to account for its advancement. The fertility of “that province, and its facilities of interior navigation, were “doubtless necessary causes, but there must have been some “temporary encouragement from the personal character of “its sovereign, or other accidental circumstances.”‡

From whatever cause, it is indisputable that the inhabitants of the Netherlands at a very early period, when the greater portion of Europe was in a dark and barbarous state, had attained to great commercial and manufacturing prosperity; for there are many concurrent testimonies that in the twelfth and succeeding centuries the Flemish textile manufactures were in a flourishing condition.§ Our Matthew, of Westmin-

\* De Witt's Interest of Holland, chap. 2, part 1.

† Meyer's *Annales Flandriæ*, fol. 18.

‡ Hallam, vol. 3, page 318.

§ Many of our English authors, who flourished about this period, testify to the flourishing state of the manufacture in Flanders, for instance Giraldus Cambrenses

ster, in hyperbolic language boasts, that "all the world was clothed from English wool wrought in Flanders." This indeed is an exaggerated vaunt, but Flemish stuffs were probably sold wherever the sea, or a navigable river, permitted them to be carried.\* So early as the year 1220 Hanseatic Merchants, dealing in Flemish cloths and stuffs, were settled in London.†

The principal mart for cloths and worsteds was at Bruges, constituting a depot for all the nations in Europe. In the height of its prosperity, merchants from no fewer than seventeen kingdoms were settled in it; but early in the sixteenth century it was shorn of much of its splendour by the rising greatness of Antwerp. Ghent and Louvain also occupied a very prominent position as manufacturing cities. The latter it is stated contained in 1305 the almost incredible number of 4000 woollen drapers, clothiers, or master weavers, and above 150,000 journeymen weavers.‡ It is worthy of remark that the inhabitants of all the great manufacturing cities of the Netherlands were strongly imbued with a democratic, refractory, and insurrectionary spirit, and frequently occasioned extensive and terrible commotions.

In the middle of the thirteenth century, the Flemish woollen and worsted trades were in a very flourishing state, but a civil war, which then ensued, greatly injured them. They revived again to receive another check about the year 1300, when some regulations instituted by the municipal magistracy for preventing the frauds of the manufacturers, occasioned great riots at Bruges, Ghent, and other places in the Netherlands. These commotions continued for many years, and resulted in great numbers of the best workmen of Flanders,

(Itin. Camb. l. 2, chap. 2,) who ascribes great skill in it to the Flemings, and states that a Colony of them established it in England; also Gervase of Tilbury, who states that the art of weaving seemed to be a gift bestowed upon them by nature. Similar testimony is borne by Ralph de Diceto and Henry of Huntingdon in the beginning of his History.

\* Hallam, vol. 3, p. 318.

† The Hanseatic Confederacy of Merchants included those of eighty of the most considerable places in Germany. They had four principal factories in London, Bruges, Bergen, and Novogorod.

‡ Anderson's History of Commerce, vol. 1, p. 273.



Brabant, and Hainault, leaving their country, and migrating to England, whither they were invited by Edward III., and endowed with many privileges, so that "England became "not only capable of supplying her own demand, but also "a rival in all the marts of Europe."\* A heavy blow to the clothing arts of the Netherlands was also inflicted by the terrible war between the Flemish cities and Count Louis, in 1380, and they gradually declined to the year 1450, when De Witt writes that "the Hollanders lost again most of those "Flemish and Brabant manufactures."†

Religious persecution gave, about the year 1567, the last and finishing stroke which finally overthrew the prosperity and ancient superiority of the Netherlands in the clothing arts. The weavers of the Netherlands being devotedly attached to the principles of liberty and the Reformation, Philip II., of Spain, their sovereign, a narrow minded and cruel prince, determined to extirpate in his dominions the new religion, and for the purpose sent the Duke of Alva with an army against the reformers, and after much slaughter and devastation, succeeded, for a time, in subduing them. Thousands of these weavers, to avoid his tyranny, left their country and settled in various parts of Europe, and among others in England, bringing with them many improved processes for making worsted stuffs, especially of the lighter and finer kinds. After this shock the manufactures of the Netherlands never recovered their former prosperous state.

During all these ages the Flemish manufactures, and also those of Brabant and Hainault, were celebrated for making, finishing, and dyeing fine worsted stuffs, and from time to time these processes were by various means imparted to the artizans of England and other countries. Even so late as the days of Henry VII., it was in a treaty with Flanders provided, that the English should not be permitted to dress or dye their woven fabrics there.‡ No pains or expense was spared by the Flemish weaver in early times to obtain English wool for his business, especially Norfolk wool, for the making

\* Hallam, *ub supra*.

† Interest of Holland.

‡ Treaty made between England and the Netherlands in 1506, article 2.

of fine worsteds; and upon the English supply the Flemish woollen and worsted trade principally depended.

Under the Roman emperors, the Gauls were celebrated for their stuffs of wool, and much of the cloths of Arras was used for clothing the imperial army; “but when war, the “fruit and germ of barbarism deluged Europe, these arts “were lost, and little of their existence found a place in the “history of mankind.”†

At length, under the enlightened rule of Charlemagne, arts and manufactures began to revive in France, and we are informed that in his reign the merchants of its maritime towns on the Mediterranean coast, traded to the East,‡ whence they would bring the methods of making fine woollens and worsteds, then extensively practised in that region; but these were afterwards almost entirely, or altogether lost, or had probably never extended to the inland and northern parts of France. Again, other writers observe, that in the succeeding ages the clothing arts were brought into France from the Low Countries.§ It has before been stated, on the authority of De Witt, that in early times the French received from that country the woven productions worn by them, and that they were a people almost wholly engrossed in tilling and cultivating the soil. It is, however, hardly to be conceived that France would be altogether without these manufactures, having on the one quarter Italy, where these were carried on, and on the other Flanders, whence they would most readily be introduced.

From various passages in the early historians it is apparent that the French had some manufactures from wool, and did

† *Encyclopedie Methodique*—Dissertation prefixed to the Article “Les Arts, “Manufactures, et Metiers.”

‡ *Muratori Antiq.* vol. 1, col. 895.

§ The writer of the Dissertation in the French *Encyclopedie Methodique* above quoted states, that the textile manufactures were transplanted from Italy to France, and thence to the Netherlands. This does not seem to be correct, for so judicious and trustworthy an authority as Hallam (independent of De Witt) states “the “woollen manufacture spread from Flanders along the banks of the Rhine into the “Northern provinces of France.” Vol. iii. p. 323.

not take the whole of their woollens and worsteds from the Flemings. For instance, the king of France, as an inducement to the Flemings to withdraw from the league with our Edward III., offered to sell them French wool at a reduced price, and to oblige his subjects to wear none other than Flemish productions of the loom. Besides many endeavours were made from time to time by French monarchs to draw the trade in English wool into France.

Unquestionably however, France, in the early ages of her history, took at least all the finer articles of woollen and worsted from the Flemings, and did not excel in manufactures of any description from wool. One weighty cause of the neglect or decay of these arose from "the evils of exorbitant taxation, which with those produced by the English wars, conspired to retard the advance of manufactures in France." For long periods during these early times she was almost incessantly at war with her neighbours, the Germans, the English, and the Spaniards; and even in times of comparative peace the lords of her provinces, who held their tenure by homage to the kings of France, were continually in strife with their sovereigns, or among themselves. In this state of affairs, it is not surprising that her commerce and manufactures were at a low ebb. And so they continued to a late period. Voltaire, in the introduction to his *Essay on the age of Louis XIV.*, alluding to times so recent as those of Francis I., remarks, "the French though possessed of harbours both on the ocean and Mediterranean were yet without a navy, and though immersed in luxury had only a few coarse manufactures. The Jews, Genoese, Venetians, Portuguese, Flemings, Dutch, and English traded successfully for us, we being ignorant even of the first principles of commerce."

But shortly after this date (time of Francis I.,) the French must have rapidly and greatly improved in manufactures as we are informed by Guicciardini, that the French, in 1560, sent to Antwerp fine cloths of Paris, Rouen, Tours, and Champagne. During the illustrious reign of Henry IV., manufactures of woollen and worsted were much encouraged and extended in France, so that the French, says De Witt,



in his Interest of Holland, could now supply others with more manufactures than Foreigners could take. This state of prosperity existed to the days of Louis XIV., when the worsted branch was in a flourishing state, and many ordinances were made for its regulation.

In the earliest times Spain possessed large flocks of sheep and furnished in the days of Cæsar, a commerce in wool and fine stuffs, the latter having long previous been introduced by the Carthaginians who traded thither, and established colonies on various parts of the coast. These colonists made and exported large quantities of drapery, the produce of the wool of their country. When under the dominion of Rome, the same textile arts with all their improvements, prevailed in Spain as in the imperial city; and it may be assumed that they even attained to greater excellence, inasmuch as the Carthaginians were immediately descended from, and maintained constant communication with the ancient Tyrians, so distinguished for their woven productions from wool. On the overthrow of the Roman Empire in the West, the Goths overran Spain, and unquestionably swept away much of the civilization and manufactures which had then taken root.

A grand epoch in the progress of Spain towards civilization commenced when the Moors or Saracens in the eighth century conquered the country. They were, as compared with the old inhabitants, an active, enterprising, and polished people, possessing great skill as well in the fine as the useful arts, especially in the preparation of fine woollen and worsted fabrics, in which they were acquainted with all the processes of their eastern race—the Saracens of Bagdad and Damascus. A continual intercourse was kept up by the Moors of Spain with the East, hence all the improvements from time to time engrafted upon the woollen and worsted manufactures by the cunning workmen of the latter, were speedily known to the former. The fragmentary remains of Casiri and Masden,\*

\* Masden's *Historia Critica de Espana*, tom xiii.; and Casiri's *Bibliotheca Arabico Hispana Escorialensis*, tom ii., which contain the most authentic account of the early condition of Spain.

and other indisputable authorities respecting the condition of Spain under the Moors, afford ample testimony that science, literature, arts, and manufactures, including those from wool both woollen and worsted and upon an extensive scale, were, during the dark ages of Europe, spread over Mahomedan Spain, while the Christian population still continued immersed in ignorance, destitute of all these tokens of civilization, and in a state of gross superstition and barbarism. At its height the rule of the Moors extended over nine-tenths of the Peninsula, and carried with it their industry, arts, and manufactures. The woven productions of Moorish Spain were in the dark ages eagerly sought after by the rest of the inhabitants of Europe, because of their delicacy and beauty of workmanship. Notwithstanding the assertions of some writers of authority, who endeavour to establish that these manufactures were subsequent to the inroads of the barbarians who conquered the Roman Empire in the West, brought from the East to Italy, and thence across the Mediterranean to Spain,\* it cannot be doubted upon diligent inquiry that the latter received them direct from the East, previous even to their introduction into Italy.

Among the provinces subdued by the Moors, and renovated by their skill and industry, stands that of Catalonia, the Yorkshire of Spain, in which the city of Barcelona is advantageously seated upon the sea. Here the Moors established and carried on successfully the above mentioned manufactures, and shipped their products for the markets of Europe. When the Catalonians finally expelled the Moorish intruders, the commerce and manufactures which they had planted and fostered, were fortunately preserved, and Barcelona became in the middle ages the principal port of intercourse with the Levant and other countries bordering on the Mediterranean sea, filled with foreign merchants, and one of the greatest centres of trade in the western world, almost equalling the commercial republics of Italy in maritime greatness and enterprise.

\* Among the writers who maintain that Spain obtained these arts from Italy, are the Editors of the *Encyclopedie Methodique*, in the dissertation before quoted.

Capmany, the judicious historian of the commerce and arts of Barcelona,\* has presented us with a faithful picture of the textile manufactures of this ancient city from an early period, which is exceedingly valuable, and illustrative of the former state of these branches of industry in Spain, of which Barcelona was the great emporium.

Treating, in part iii., of the “Ancient Arts of Barcelona” the historian mentions the ‘*palayres*’ combers of wool,† and records that this trade was among the oldest in the city, and the “fundamental cause of its ancient prosperity,” shewing that in the year 1257 the worsted manufacture was very flourishing. Wool-combers are in that year enumerated among the artizans of the city, and even so early as then, rules or statutes were framed for their regulation. These were enlarged in the year 1387, and many of the provisions contained therein, for the regulation of the “combers of worsted,” are similar to the provisions in modern acts of parliament for preventing embezzlement and frauds by wool-combers, and enter into many particulars. The king, in 1493, confirmed to the wool-combers of Barcelona their privileges, and in the grant it is recited, that their art “was of great antiquity, and had conducted much to the prosperity of the city.”

Several of our annalists have narrated, that in the reign of Edward III., and again in that of Edward IV., a number of English sheep were, as a great boon, allowed to be transported to Spain to improve the Spanish breed, thus denoting that the English wool was superior to the Spanish. But very conclusive confirmation on this point is given by Capmany, in a number of laws drawn up in the year 1438, by the municipal authorities of Barcelona, for regulating the manufacture of cloth (woollen and worsted) from fine English wool, (*lanes fines de Anglaterra.*) There are thirty of these

\* Capmany’s “*Memorias Historicas sobre la Marina, Comercio, y Artes de la Antigua Ciudad de Barcelona,*” Book 1, part iii, page 93. The edition here quoted is that of Madrid, 1779.

† “*De los Palayres y otros fabricantes del arte de la lana.*” He afterwards mentions “*Cardadora de estambre o lana*” *Estambre*, the distinctive name in Spanish for worsted.



regulations, the first prohibits the mixture of any other wool with the English; the other sections are entirely filled with precautions for preserving the purity of the wool in spinning, and through the other stages of the manufacture, and against debasing the fabric; rules for the inspection of the finished goods, and for ascertaining the quality by known authorized marks. We are also informed by Capmany, that in the fifteenth century fabrics made from English wool were sometimes sent to England. Vast quantities of Spanish wool were shipped for the use of the manufacturers of Flanders in that century, shewing that the growth of Spanish wool must have been very great to allow of so large an exportation, after supplying the extensive home consumption. Considerable commercial intercourse took place between England and Spain in the middle ages, and many immunities were from time to time bestowed by our kings upon Spanish merchants trading hither.

Every improvement in his trade was eagerly sought out and adopted by the ingenious and prosperous weavers of Barcelona, who produced the finest worsted goods, and imitated the choicest stuffs of other nations. Irish Says having about the year 1360 become distinguished, the art of making them was imported to Barcelona, where it furnished a lucrative and prosperous business. We also find from Capmany, that some of the English fabrics, and also the fine ones of Florence were also imitated by these manufacturers of Barcelona with success, and shipped to various parts of Europe.

Altogether, it is certain, that previous to the gold-seeking enterprises of the Spaniards, in America, they were extensive and ingenious manufacturers of woollens and worsteds, which were esteemed both at home and abroad, and that great care was taken by the magistracy of their towns to perfect and preserve from debasement these trades. After the discovery of the New Continent, the Spaniards became the great bullion dealers of Europe, and despising and neglecting the clothing arts, they rapidly sank to obscurity in Spain.

## CHAPTER III.

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### WORSTED MANUFACTURE IN ENGLAND.

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Clothing Arts of the Ancient Britons.—During the Roman sway in Britain.—Among the Saxons.—An impulse given to these arts by the arrival of the Normans.—Flemish Weavers come in the train of the Conqueror, and settle in various parts of the Country.—Further arrival of Foreign Weavers in the reigns of Henry I., and Stephen.—Derivation of the word ‘Worsted.’—Notices of the Manufacture in England during the twelfth, thirteenth, and part of the fourteenth centuries; and of the Worsted Fabrics then made.—Vast quantities of Wool produced in England, a great portion of it exported to Flanders.—Account of Wool exported from England in the time of Edward I.

THE inhabitants of the inland parts of Britain were at the time of the Roman invasion, clothed, according to the fashion of savage tribes, in the skins of animals; but it is recorded that the residents in the maritime parts of the island, adjacent to the continent, wore apparel made from wool. Cæsar narrates that he found them clothed in drapery similar to that used in Gaul and the Belgic States, where considerable manufactures from wool then existed.\*

On the subjugation of the island by the Romans, they imparted the clothing arts to the natives, and especially taught them to form raiment from the fleece. At this period, if not earlier, it is probable the worsted manufacture became established in Britain;† and thus we trace it, like the

\* Cæsar’s Commentaries.

† As there is no question that the Romans possessed the art of making Worsted Stuffs, there seems no room for doubt that it would be imparted to the natives of Britain. Whitaker, in his learned History of Manchester, (vol. i. page 378), after alluding to the submission of the Brigantes, a tribe inhabiting the district comprising Yorkshire, states that the Romans established among them Manufactures from Wool.

source of a mighty river from its first obscure and feeble spring, until it has become one of the most important elements in the commercial greatness of this kingdom. The Romans following their invariable method for firmly fixing themselves in conquered nations, were, as is related by Tacitus,\* peculiarly assiduous to teach to the refractory inhabitants of this island the arts, manufactures, and civilization of Imperial Rome, as the best tamer of their martial and insurrectionary spirit. Hence were founded, in various parts of the country, extensive manufactories for fabricating cloths from wool. A large one flourished at Winchester for the purpose of supplying the Roman army.† It is stated by Dionysius Alexandrinus “that the wool of Britain was “often spun so fine, that it was in a manner comparable to “the spider’s thread,”—an indication of the manufacture of fine worsted stuffs.

When the Romans retired from this country, and were succeeded by the Saxons, the arts of life greatly declined; for the latter were an exceedingly rude uncivilized people, and only acquainted with spinning and weaving in their simplest forms. But after the numerous petty kingdoms of the Hephtharchy had been united, and brought under the dominion of one monarch, peace prevailed, a desire for elegance in dress gradually sprang up, and the weaving arts became much improved, and more decorative.‡ Spinning with the distaff and

\* Life of his father-in-law Agricola, the Roman General, who conquered the Brigantes. Tacitus also relates that the Britons became very fond of the Roman dress, which has been shewn on the preceding pages, to have comprised articles of Worsted.

† Camden’s *Britannia* treating of Winchester.

‡ Adhelm, the celebrated Bishop of Sherborne, in his “Praise of Virginité,” makes use of the following illustration, “We do not negligently despise the Wool-len stamina of threads worked by the woof and the shuttles, even though the “purple robe and silken pomp of emperors shine.” Again, “The shuttles not filled “with purple only, but with various colours are moved here and there among the “thick spreading of the threads, and by the embroidering art they adorn all the “woven work with various groups of images.”—Quoted in Turner’s *History of the Anglo Saxons*, vol. ii. page 112, who adds, “The Saxon ladies were so much accustomed to spinning, that, just as we, in legal phrase, and by reference to a “former habits now obsolete, term unmarried ladies spinsters, so Alfred, in his will, “with true application called the female part of his family the spindleside.”



spindle formed the employment, nay even the recreation, of the noblest of the sex; and it is recorded that the daughters of King Edward the elder, employed themselves in spinning, weaving, and embroidery,\* which “were very prudently “taught them to fill up the very large vacuities of an unlettered life with an innocent and reputable employment.”† The loom of the Saxons is represented of very rude and simple construction, similar to the ancient Roman one. They had large flocks of sheep, and produced great quantities of wool, which must have been of a fine quality, judging by its high price.‡ Textures from wool, including worsted, formed a considerable portion of the Saxon exterior dress, but it is conjectured that they did not require the whole of their fleeces, but exported a large portion to Flanders, which was then distinguished for the variety and the beauty of its wool fabrics.§ In a dialogue, quoted by Turner in his History of the Anglo Saxons, in which a merchant enumerates the various articles imported by them, cloths or woven stuffs of any kind, are not mentioned. It is, however, probable that although they possessed, from their close and friendly intercourse with the Normans, all the materials of clothing, both woollen and worsted, known to the latter, they only fabricated the coarser articles.|| This opinion is countenanced by many of our best writers.

On the accession of William the Conqueror to the English crown, a large number of Flemish weavers following in his train, settled in various parts of England, improving very

\* Malm. de Gestis Regum Angliæ, lib. ii., c. 5.

† Whitaker's History of Manchester, vol. i., page 225.—It is recorded that the mother of Alfred the Great was skilled in the spinning of wool, and trained her daughters to the same pursuit.

‡ The fleece was in the time of the Saxons two fifths of the value of the whole sheep.—Dr. Henry's History of England, vol. ii., Book 2, c. 5.

§ Macpherson's Annals of Commerce, vol. i., p. 288.—He adds, “That there was “an export of wool seems to be indicated by the disproportionate price the fleece “appears to have borne compared with the whole sheep, and also by the high price “of wool.”

|| Strutt on Dress, vol. 1., p. 88.—He is of opinion (see Introduction to vol. i.) that they imported the finest kinds of cloths.

much the manufacture from wool then carried on here, and introducing some entirely new branches of it. The Flemings were so skilful in the productions of the loom, that one of our ancient authors says, "the art of weaving seemed to be a "peculiar gift bestowed upon them by nature."\* A portion of these foreigners became resident in Norwich, and thus it is probable commenced the great staple manufacture of that city, whence it has derived its mercantile importance. The Normans and Flemings were proverbial for their love of dress, which imparted to their woven goods great elegance and fineness, and tended to encourage the improvement of the textile arts, and give a stimulus to trade.†

In the reign of William Rufus, worsted seems to have been used in making stockings, for in an account of the wardrobe of that monarch is enumerated a pair of stockings made of Say, a species of worsted, valued at the large sum, in those days, of three shillings.‡ Strutt, a respectable authority on this subject, observes, in reference to the above statement, "amongst the earliest productions from the loom in this "country, may be placed the Saies or Says. We can trace "this species of cloth as far back as the eleventh century, and "at that time it seems to have been a valuable article."

Though it has been shewn, that in the reign of the Conqueror, a number of foreign weavers came into this country, and a respectable author, as above, asserts that the Say manufacture was carried on in England in the eleventh century, yet many writers have fixed the era of the introduction of Flemish weavers into this kingdom in the reign of Henry I., when a great inundation drove them out of their country, and they took refuge here, bringing with them the woollen and worsted manufacture.§ Blomefield, in his History of Nor-

\* Gervase of Tilbury, p. 1349.

† Mr. Blakeley, in his interesting account of the Manufactures of Norwich, lately published, states, "Some of them [Flemish Weavers] settled in the parish of "St. Peter's, Mancroft, Norwich, and these, with others dispersed throughout the "Country, prosecuted a thriving trade."

‡ Strutt on Dress, vol. ii., p. 210.

§ William of Malmesbury, p. 848.—Fuller's Church History, p. 111.—Macpherson in his Annals of Commerce, and many other writers of note assert, that the

folk, countenances the opinion, "that several of them settled  
 "at Worstead in Norfolk, and so early introduced the art of  
 "stuff-weaving there, which, as is natural to suppose, soon  
 "made its way to Norwich, not that I think it grew to any  
 "great consequence till the latter end of the time of Henry  
 "III. and Edward I., when it much increased, so that in the  
 "time of Edward II. worsted stuff was famous, and Norwich  
 "increased very much by the making of it."†

Amidst these multiplicity of statements, especially, as from the want of sufficient evidence, the question is in its nature obscure, it is impossible to form any precise and certain opinion when the worsted manufacture was introduced into England. It may, however, from the preceding pages be reasonably conjectured that the Romans introduced it; that in its rudest form it was known to the Saxons; that the Flemings who came with the Conqueror increased it; and that the large accession of foreign weavers in the reign of Henry I., who especially settled in Norfolk, greatly enlarged and improved the production of worsted. This view appears to reconcile, in a great measure, the otherwise contradictory statements of numerous writers on this controverted subject. During the reign of Stephen, there was a further increase of these foreign weavers; and our national archives bear witness to the fact, that in the reigns of Henry I., and Stephen, many guilds of weavers were incorporated in various parts of England, denoting a considerable production of woven goods.‡

A convenient place now presents itself to trace to its root the word 'Worsted.' There have been three hypotheses as to its derivation. The one currently received, and sanctioned by

Flemings who came into England in the reign of Henry I., established here the Woollen Manufacture.

† Blomefield's History of the County of Norfolk, vol. iii., p. 83.

‡ From the Charter of Henry II., to the weavers of London, (hereafter quoted), it is seen that their guild was in existence in the time of Henry I. The weavers of Oxford paid a mark of gold for the privilege of their guild in the twelfth year of the reign of Stephen; those of Winchester paid two chaseures or hounds for the same privilege; and in the fifteenth year of Stephen those of London £16.



the highest authorities is, that this manufacture received its name from the town of Worsted. Camden, in his *Britannia* ;\* Skinner, in his *Etymologicon* ;† Ducange, in his *Glossary*, and indeed almost every writer who has alluded to the etymology of the word, has adopted this derivation.

The second supposition assumes, that the word is derived from the Dutch term ‘Ostade,’ signifying this particular branch of woollen fabric ; and that the corruption ‘Worsted’ took its rise from the Flemish weavers establishing it at, and giving name to the town. This is supported by Dr. Parry in his work on Merino sheep, no great authority ; but is adopted by the writer of the article on the worsted manufacture in Rees’ *Encyclopædia*, who remarks “that as the Flemings introduced the manufacture into England, it is probable our appellation is a corruption of theirs. Ostade was long ago a common surname in Flanders, and was probably the surname of some person famous for this particular branch of the woollen trade, which afterwards was appropriated to an establishment of similar manufactures in Norfolk.” There is no doubt, but in the middle ages, worsteds were in the Netherlands termed ‘Ostades,’ for Guicciardini, in his account of that country, mentions them by that name among its manufactures.

The third derivation is founded upon the conjecture of Archdeacon Nares, a very respectable authority, who in his curious and valuable *Glossary* supports his opinion in these words, “Worsted is usually supposed to be named from the town so called in Norfolk, where it is therefore thought to have been invented, but woollen thread, yarn, and stuff, might naturally be termed woolstead, as being the

\* Camden’s *Britannia*, Edition of 1695, p. 389, “Worsted a Stuff of Wool so named from a town in Norfolk, where this species of goods was first made.”

† Skinner, in his *Etymologicon*, writes, “Worsted in com Norf. oppidum, unde lana texta Worsted dicta nomen sunsit, ut Darnix, Cambrick, Arras, Callico, á Tornaco, Cameraco, Atrebatu et Caleculo urbibus in quibus illa opificia maximè floruerunt; Worsted autem deflecterem ab A. S. Worth, Aula, villa, et Steda, sted, locus.

Dr. Johnson, in the large Edition of his Dictionary, following Skinner, adopts this derivation.

“ staple or substance of wool, and it appears to me more probable  
“ that the town was named from the manufacture, than that  
“ from it. Both might be easily corrupted to worsted, by the  
“ common change of the letter *l* to *r*. Worsted thread or yarn,  
“ must have been known as long as the spinning of wool, that  
“ is, as long as clothing was used. The town had probably a much  
“ later date, and was originally called Woolsted, from being a  
“ sted or station for woollen manufactures. This, however, is  
“ only a conjecture, and opposite to the opinion of Skinner  
“ and others.”

This last hypothesis may be dismissed as unsatisfactory without further remark. The question remains between the other two, which the following observations will assist the reader in deciding. It is certain the town of Worsted existed in the time of the Saxons, for in Domesday Book it is recorded, that in the reign of Edward the Confessor, the Lordship of Worsted belonged to the Abbot of St. Bennet, of Holme ; and at the great Survey to one of the king's officers, who assumed, according to the custom of the time, the surname of Wursted. This is therefore conclusive, that, if the town derived its name from the manufacture, it must have done so in the Saxon times. Skinner's derivation of the name of the town seems a very satisfactory one, signifying in Saxon, Hallstead. Again, it is well known that peculiar branches of manufacture have very frequently received their appellations from the names of the places where first carried on : besides, in the earliest ages there does not seem to have been the broad and marked distinction between woollen and worsted, nor any specific term to designate the peculiar branch. It is certain, that by the Romans these articles were only defined by way of circumlocution, describing their qualities, and not by any single and precise term. Until it be shewn, that previous to the time of Edward the Confessor, the Flemish gave the appellation, ‘ Ostade ’ to this manufacture, there is not sufficient ground for rejecting the commonly received derivation, for it must also be remembered that the town of Worsted was in the earliest times, it is admitted without question, one of the first and principal

seats, if not the first, of the worsted trade. The wool of Norfolk was in the most remote times peculiarly adapted for the fabrication of worsted goods, and this was, probably, the main cause of the manufacture springing up, and flourishing in that locality before any other part of the kingdom.

Without attempting to determine with certainty this etymological controversy, it may be fairly asserted, that a preponderance of reasons and probabilities is in favour of the derivation of "Worsted" from the town of that name, and that 'Ostade' is a Flemish corruption of the word. Blomefield, the historian of Norfolk, has the following observation on this dispute. "That it [the worsted manufacture] was first introduced at Worsted I make no doubt, from its name which occurs in the most ancient things I meet with in relation to it, it being as plain that it had that name on that account, as the name of Norwich stuffs at this day, for the same reason."\*

There are few points in English History more commonly misrepresented than the origin here of the woollen and worsted manufactures. Some eminent writers, who from their knowledge and general accuracy might have been expected to be better informed on this subject aver that these manufactures were little, if at all, prosecuted in England, until the reign of Edward III, and that previous thereto the clothing materials of the inhabitants were woven abroad and obtained in exchange for our wool.

Such a supposition is very erroneous, for it admits of no controversy, that from the time of the conquest to the era of Edward III., the clothing arts were practised here, and that in some of the intervening periods they were widely spread, and extensively cultivated in this kingdom, as the following pages will abundantly prove.

Throughout his long reign, Henry II., a wise and prudent prince, evinced on all occasions a desire to encourage the trade and general prosperity of his kingdom. Our national

\* Blomefield, vol. iii., p. 83.



records prove, that while he sat on the throne the clothing arts flourished in all the principal towns, and render it certain that a large portion of the wool grown in England must have been fabricated into cloths and stuffs. The guilds of weavers formed for protection and improvement of their craft, were very numerous during the sway of this king.\* Such fraternities were not uncommon among the Anglo-Saxons, but prevailed to much greater extent on the Continent, and were transplanted hither by the weavers and other craftsmen from abroad. No institution tended more to promote liberty, than that of our English boroughs, where a number of persons bound together by common ties and interests, were thus rendered powerful enough to resist the oppression and encroachment of the monarchs and great barons of the period. Guilds, or companies of trades, were formed upon the same principle, being indeed boroughs or corporations in miniature, and became exceedingly useful in protecting and fostering the handicrafts and trades then practised, and much conduced to improve and bring them to considerable excellence. Afterwards these guilds, having served the purpose of the age, became in later passages of our history, as pernicious as formerly they had been useful, and by their restrictions and monopolies greatly cramped and hindered the progress and enlargement of manufactures and commerce.

There is abundant testimony, that the flourishing condition of

\* In the twelfth year of Henry II., the Weavers of Winchester paid one mark of gold as a gresome, and two marks as their annual rate for the rights of guild and the privilege of choosing their own Aldermen.—See Madox's History of the Exchequer, chap. 13, sec. 3. The Weavers of York paid in the time of Henry II., a large sum for the privileges of their guild.—Drake's History of York, p. 229 (note.) Guilds of Weavers were established in all the principal towns of the kingdom.—See Madox's History of the Exchequer. The Weavers of London obtained a Charter of Incorporation in the time of Henry II. James Howell, in his *Londinopolis*, gives a sketch of this Charter, which grants to them their guild with all the freedoms and customs they had in the days of his *grandfather Henry I.*, yielding yearly for the same two marks of gold. Sir Matthew Hale, in his Treatise concerning the Customs, observes that in the reign of Henry II., the Manufacture of Woollen Cloths *greatly flourished*; but by the troublesome wars in the times of King John, Henry III., Edward I., and Edward II., *was wholly lost*, and all our trade ran in Wool, Woolfels, and Leather. The terms "wholly lost" are incorrect though there was, undoubtedly, a decay in the Manufacture.

the textile arts, on the decease of Henry II., continued, notwithstanding the warlike disposition of Richard I., and his absence from the kingdom, little impaired. Even then broad cloths appear to have been made in England.\* The East was famous, especially Constantinople, for the fineness and variety of its woollen and worsted fabrics, and the many artizans who followed 'Lion's Heart' to the crusade against the Saracens, would, it may be assumed, though there is no satisfactory evidence of this, bring home many of the Eastern methods of weaving superior cloths and stuffs, and which in this age were, in like manner through the channel of the crusades, imported to Italy and Flanders.

When the great war commenced between king John and his barons, the productions of the loom very much declined, so as to become of small importance: most of these indeed seem to have been imported. Owing to the turbulence of the reign of his son Henry III., the textile manufactures did not recover their former state. But that these branches of trade were not wholly lost, is evident from an act of parliament passed in this monarch's time, which contains a clause for regulating the breadth of woollen cloths; it is plain however these were only of the coarsest kinds.†

No political maxim is more true than, that even the necessary arts of civilized life cannot prosper amidst war and commotion, and that when once frightened from a nation, they do not, even when peace has been restored, readily return.

\* "In the *Capitula Placitorum Coronæ* of Richard I., chapter 28, we find that "broad cloth was made in England, for it is ordered, that it should be all of one breadth, namely, two ells within the lists, and of the same goodness in the middle as edges. It is hardly to be supposed that the king would prescribe rules to other nations for making their cloths.—Anderson's *History of Commerce*, vol. i., p. 180."

† "There shall be one breadth of dyed cloth, russets, and haberjects, namely, two ells within the lists."—9th Henry III., chap. 25. Upon this Statute, Lord Coke observes, "True it is that broad cloths were made, though in *small number*, at the time, and *long before it*."—Coke's *Second Institute*. Fine cloth was, however, no doubt imported; for, about this time, a patent was granted to Simon de Campis, that he should trade throughout England with his cloth.—Madox's *History of the Exchequer*, p. 526.

This position is apparent, from the rapid decline of our manufactures, during the reigns of John, and Henry his son, when the labours of the loom almost ceased, and from the fact that they did not greatly improve during the comparatively peaceful reign of Edward I., who from the wisdom of his laws and general policy, obtained the appellation of the English Justinian.\*

Strong presumption is afforded by the account of wool exported in the time of this king,† that only a small proportion of the long wool of Norfolk, peculiarly fitted for the making of worsteds, was carried to foreign parts, but mostly worked up at home, and that the manufacture was even then one of importance. This will at once be obvious, when it is observed, that in the ninth year of Edward I., the export of wool amounted in value to only £381 0s. 3d., from Lynn and Yarmouth, and in the fourteenth year of Edward I., from both these ports, to £377 2s. 5d., while the value of the wool exported in these two years from Boston, the port of Lincolnshire, amounted annually to upwards of £3,000. Norfolk was then, as indeed at all periods of our history, especially since the conquest, a great wool-bearing county, as will be found from the scattered allusions in records of the

\* In the fourth year of Edward I., the Burgesses of Hedon, in Yorkshire, were convicted of making cloth of less width than was required by law.—Hundred Rolls, vol. i., fol. 122a. A Weaver of Gomersal, was, in 1284, confined in the prison of Bradford; and three years later Frizinghall, near Bradford, is mentioned as belonging to one Robert Everingham, and probably took its name from a manufacture of Frieze or Frize being carried on there.—See James's History of Bradford, In the twenty-fifth year of Edward I., Perout, le Taillour, who held the office of Alnager of Cloth in the several fairs of the kingdom, having forfeited, by misbehaviour, the alnage and assize of cloth, they were committed to Peter de Edelmeton.—Madox, p. 538. The Hanseatic Merchants and those of Flanders carried on, in the time of Edward I., a very important trade in Boston, as appears by the valuation of the property of the Honor of Richmond taken in 1279, which shews that Merchants from Ipres, Cologne, Caen, Ostend, and Arras, occupied houses in Boston.—History of Lincoln, vol. 1, p. 216, published in 1834. Boston fair of St. Botolph was one of the greatest cloth marts in the kingdom, and it is therefore probable that these Merchants imported foreign cloth for sale at this fair.

† See account at the end of this chapter.



kingdom, quoted in this work, and famous for long wool peculiarly adapted for making of worsteds.

The first distinct mention of the name of worsted as an article of clothing, which has been met with, occurs in the time of Edward II., when the making of it had evidently been established for a considerable period at Norwich, as its principal seat ; for in the eighth year of his reign, a complaint was exhibited to parliament against the clothiers of that city, for making the worsteds, called old hames, five yards shorter than they had "*been accustomed*" to be made, and selling them for full measure. This abuse was rectified by an act of parliament then passed, and the price of every piece of cloth was regulated by the number of yards it contained.\* Strutt has the following observation on this statute, "Antiently "the cloths made at Norwich, denominated worsteds and "oldham, were sold unfairly, the merchant reckoning thirty "yards to the piece, which in reality contained no more than "twenty-five, so that the purchaser paid for five yards more "than he received."† In another part of his work he states, "Worsteds called also cogwares, or vesses and old hames, "made at Norwich, are mentioned in the statutes as early as "the eighth of Edward II.

From the wording of this complaint against the Norwich weavers, there is evidence that the making of worsteds had been long established in that city, as it is averred that they had then "*been accustomed*" to be made there.

A conjecture may here be offered, on the signification of the term, "oldhames" which may, without any forced construction, imply that the fabric was so termed, because it had long and of *old* time been made at Home, (in this country), and to contradistinguish it from foreign woven productions.

If any doubt existed that in the reign of Edward the II., the worsted trade had become considerable, it is removed by a record, which informs us that this monarch, through the

\* Rolls of Parliament of Edward II., M.S., insig., 7057, quoted in Strutt, vol. 2, p. 194.

† Strutt, vol ii., p. 203.

intercession of his queen, granted a patent to one John Peacock, Sen., empowering him to hold the office of Alnager of worsted, which required that he should measure, and, to testify that they were of the specified length, seal all the stuffs made in Norwich or Norfolk, previous to their being offered for sale,\*—a precaution, which the above mentioned complaint justified, on account of the frauds practised by the worsted weavers of Norwich, who were thus required to have their worsted pieces measured and sealed, before they could be offered for sale.

To conclude this faint sketch, from the scanty materials which authentic records afford, of the progress of the worsted manufacture, to the close of the reign of Edward II., it would be interesting to exhibit the articles of worsted manufacture worn by the English, during the twelfth and thirteenth centuries. The following fabrics then used, seem to be of this class, but which were imported, or manufactured at home, it is impossible to determine.

Say, or as it is written in French, Saie, a stuff at that period, of very fine quality. Though not esteemed among the most precious kinds of clothing, yet it appears to have been a costly and delicate dress.

Serge, used for curtains, hangings, and other domestic furniture, and for coarse articles of dress. Ducange mentions red and black serges made of wool, and painted serges.

Marbre, as it was called in French, a species of worsted cloth, interwoven in such a manner as to represent veins of marble, whence it received its name.

Bombazine was also often worn during the thirteenth century, under the term bombax.

Tiretaine, a species of cloth so termed in French, was in use, and as it was made by the same workmen as serges, has been supposed to be of a similar kind. In a book for the

\* Blomefield's Norfolk, vol. 3, p. 80.—The work Alnager is a corruption from *ulne* the Latin for ell, signifying that such officer was to measure the stuffs and see that they contained the specified number of ells.

preservation of health, in M.S., of the thirteenth century, ladies are recommended to wear tircetaine in spring. Another kind is enumerated under the name of stamen-forte, probably of the same sort as the stamen hereafter mentioned.

Camlet is also classed among the precious stuffs, worn by the higher ranks of society.\*

The 'Say' was however the great article of worsted in use at this period. The English undoubtedly, in the twelfth and thirteenth century, made Says of some qualities at least. It indeed appears, from mere reflection, certain, that in some of its modes the worsted manufacture was practised wherever the woollen one existed.

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From the earliest periods, English wool became distinguished for the length and fineness of its staple, and for its general adaptation for clothing. In consequence of the extensive tracts of sheep-walks in England, and the vast number of sheep reared, the produce of home-grown wool reached an exceedingly great amount in the early portions of our history, much more than sufficient for home consumption, and great quantities were therefore exported to Flanders and other parts of the Continent. Matthew of Westminster, an historian of the Norman period, asserts that all the nations of the world were kept warm by the wool of England, made into cloth by the Flemish manufacturers. Though this is hyperbolical, it exhibits the great dependence of those manufacturers upon English wool, and the large quantity of it exported. Unquestionably the duty on its export formed, during the early periods of our history, the principal source of revenue of the national exchequer.

An extract from Dr. Whitaker's History of Craven (published in 1805) exhibits the value of wool towards the close of the twelfth century, and the strong inducement

\* These articles are specified in Strutt, vol 2.



it offered for the culture of sheep. "A sack of wool sold for £6. The sack consisted, according to Spelman, of twenty-six stones, each weighing fourteen pounds. A labourer then only received a penny a day, and an ox was worth about thirteen shillings and fourpence, whence it follows that at that time two and a half stones of wool would purchase an ox, whereas a labourer will now earn the value of a stone of wool in a week. At that time it would require sixty days, so that poor sheep-walks were as valuable as the best land."

The quantity of wool grown in England, during the early ages, must have been very great, as Spelman relates, that in 1297, the nobles, in a list of grievances delivered to Edw. I., allege that one-half of the wealth of the kingdom consisted of wool.\* This, however, must have been much exaggerated, but other writers state that the quantity was so considerable, that it formed a large portion of such wealth. It is apparent from numerous authorities, that the wool of England was so valuable and so greatly in request in those times, for home consumption and export, that it caused most of the arable land of the kingdom to be converted into sheep-walks, and prevented the enclosure of the commons and wastes spread so extensively over the country. Whitaker, in the History of Craven, narrates that the monks of Fountains Abbey possessed in the fells and pastures of Craven immense flocks of sheep, which they annually brought, with great rejoicings, to their Granges to be shorn, and which composed a very large portion of the revenues of the monastery.

The Monks were great sheep-holders. One year's wool was borrowed of the religious houses of the Cistercian order towards raising the heavy ransom of Richard I.

The following is an account, (extracted from the Great Rolls of the Pipe of the time of Edward I., preserved in the Exchequer) of the 'new customs' paid by certain merchants of Lucca on the wool, woolfels, and leather exported

\* Spelman's Reliq: 162, Ed. 1698.

during one year (9 Edward I.), which throws considerable light on the state of the export of wool at that time.

	£.	s.	d.
<i>In the Port of Newcastle-upon-Tyne</i> .. .. .	323	3	9
For the duties on 771 sacks $7\frac{1}{2}$ stones of wool, 11,182 Woolfels, and 8 lasts 12 daces of skins, at the rate of $\frac{1}{2}$ a mark for every sack of wool, 1 mark for every last of leather, and $\frac{1}{2}$ a mark for every 300 woolfels.			
<i>In the Port of "Hul" (Hull)</i> .. .. .	1086	10	8
For 3141 sacks of wool, 88 woolfels, and 59 lasts 12 daces and 7 skins of leather			
<i>In the Port of St. Botolph (Boston)</i> .. .. .	3599	1	6
For 10,675 sacks and a half (of wool), 28,215 woolfels, 13 lasts, 14 daces and a half of leather.			
<i>In the Port of ——— (This probably Lynn)</i> ..	371	7	11
For 1091 Sacks, $15\frac{1}{2}$ stones of wool, and 11 lasts 2 daces and 1 skin.			
<i>In the Port of Gernemue (Yarmouth)</i> .. .. .	9	12	4
For 23 Sacks, 5 stones of wool, 175 woolfels, 2 lasts, and 11 daces of leather.			
<i>In the Port of "Gypewyce" (Ipswich)</i> .. .. .	116	3	$0\frac{1}{2}$
For 223 Sacks 16 clav. of wool, 36,476 woolfels, 1 last, 15 daces and 7 skins of leather.			
<i>In the Port of London</i> .. .. .	1602	16	$6\frac{1}{2}$
For 4,789 $\frac{1}{2}$ sacks of wool, 954 woolfels, 7 lasts, 18 daces and 1 skin of leather.			
<i>In the Port of Sandwyce (Sandwich)</i> .. .. .	74	13	4
For 208 sacks $43\frac{1}{2}$ clav. of wool, 4543 woolfels.			
<i>In the Port of Shordham and Sohaff cum append. (Shore- ham and ———with their liberties)</i> .. .. .	189	5	10
For 553 sacks 24 clav. of wool, 4,500 woolfels, and 75 skins of leather.			
<i>In the Port of Suhmton (Southampton)</i> .. .. .	1019	10	0
For 2801 sacks 49 clav. of wool, 28,727 woolfels, and 63 lasts, 16 daces, and 1 skin of leather.			
<i>In the Port of Waymue (Weymouth)</i> .. .. .	19	13	10
For a certain portion of wool and woolfels.			
	£8411	19	$8\frac{1}{2}$ *

It appears the duty granted by these 'new customs,' in the third year of Edward I., was six and eight-pence a sack on wool. Three hundred woolfels were equal to a sack of wool, and paid as duty six and eight-pence.

\* Frost's Hull, 102.

Another account of the duties collected by the same Italian merchants on wool, woolfels, and leather, from Easter in the fourteenth year of Edward I. to the succeeding Easter gives the following amounts :—

							£.	s.	d.
Newcastle	..	..	..	..	..	..	244	2	11 $\frac{3}{4}$
Hul ( <i>Hull</i> )	..	..	..	..	..	..	951	4	8 $\frac{1}{4}$
St. Botolph ( <i>Boston</i> )	..	..	..	..	..	..	3049	14	1 $\frac{1}{2}$
Lenn ( <i>Lynn</i> )	...	..	..	..	..	..	338	3	8
Gypwic and Donewic ( <i>Ipswich and Dunwich</i> )	..					..	88	17	6
Gernemue ( <i>Yarmouth</i> )		..	..	..	..	..	38	18	9
London	..	..	..	..	..	..	2304	5	9
Suht ( <i>Southampton</i> )	..	..	..	..	..	..	696	7	7 $\frac{3}{4}$
Weymue ( <i>Weymouth</i> )	..	..	..	..	..	..	46	4	5
Exon ( <i>Exeter</i> )	..	..	..	..	..	..	11	19	6 $\frac{1}{4}$
Wynchelsey	..	..	..	..	..	..	2	8	11
Sandwyco ( <i>Sandwich</i> )	..	..	..	..	..	..	59	6	6
Schorhm ( <i>Shoreham</i> )	..	..	..	..	..	..	185	3	0 $\frac{1}{4}$
							£8016	17	5 $\frac{3}{4}$

The total duties on these articles were :—

							£.	s.	d.
From the 15th to the 16th Edward I.	..	..	..	..	..	..	8960	3	10 $\frac{1}{4}$
„ 16th to the 17th	..	..	..	..	..	..	9976	6	1 $\frac{3}{4}$
„ 17th to the 18th	..	..	..	..	..	..	10,358	3	2 $\frac{1}{2}$ *

A statute passed in the fifty-first year of Henry III., imposed a custom on wools exported, but it is not shewn how much. The ‘new customs’ sanctioned in the third year of Edward I., were changed in the twenty-second of the same reign, to forty shillings a sack on wool. In 1298, the king ordered that Norfolk wools should only be exported from the port of Lynn.

\* All these accounts are taken from the before mentioned Great Rolls of the Pipe.



## CHAPTER IV.

Great Encouragement given to the Woollen and Worsted Manufactures by Edward III.—Invites numerous Continental Weavers to this Country.—Many settle in Norfolk, and other of the South Eastern Counties, and probably bring with them improved methods of making Worsted Fabrics.—The King shews these Strangers especial favour and protection.—Fuller's quaint Account of their Settlement in England.—Curious Statement of the Exports and Imports of the Kingdom, proving that a large number of Worsted Pieces were exported.—Notices of the Manufacture during the intermediate reigns from the time of Edward III. to the accession of Henry VII.—Decline of the Worsted Trade during the devastating Wars between the Houses of York and Lancaster.

It is obvious from the preceding pages that the worsted and woollen manufactures flourished to a considerable extent previous to the time of Edward III., and that the commonly received notion, attributing to him their first establishment in England, is exceedingly erroneous.\* He, however, so far extended, and improved, and gave such notable encouragement to these branches of trade, that from his reign may be dated a new era in their history. This monarch could not with his sagacity, and the earnest desire he ever evinced for the welfare and prosperity of his subjects, remain long unmindful of the great profit and advantage which would accrue to the kingdom, by working up the English wool for domestic consumption or export, instead of exporting the

\* Among many other writers who have erroneously attributed the beginning of the Woollen Manufacture here to Edward III., may be quoted Dr. Robertson, who remarks,—“By alluring Flemish artizans to settle in his dominions, as well as by “many wise laws for the encouragement and regulation of trade, Edward III. gave “a beginning to the Woollen Manufacture of England, and first turned the active “and enterprising genius of his people towards those arts which have raised the “English people to the highest rank among commercial nations.” View of the progress of Society in Europe, prefixed to the History of Charles V.

material in a raw state. When therefore he espoused Philippa, the daughter of the Earl of Hainault, whose subjects were excellent cloth makers, the close connexion which this marriage occasioned between the two countries, and probably in part some suggestions of the Queen, induced Edward III., in 1331, to invite hither a large number of her countrymen skilful in the weaving of woollen and worsted. These Flemish weavers settled by the king's direction, and under his especial favour and protection, in various parts of the kingdom,\* where the wool grown in the district was suitable for the particular kind of cloth or stuff fabricated by these artizans. The worsted weavers were, in accordance with this arrangement, principally located in Norfolk, Suffolk, and Essex, having Norwich for their chief seat or mart. Though there can be no question that the worsted manufacture had risen to importance previous to the days of this monarch, yet it is highly probable that these strangers greatly improved it, and brought with them the art of making some new and finer kinds of worsted fabrics. At least, such a great influx of foreign craftsmen would give a stimulus to, and largely extend the trade. It is asserted by many writers, that the Flemings in this reign, brought in the art of making fine broad cloth. Whatever improvement they introduced in this respect, it appears from the account of exports and imports, in the twenty-eighth year of this king's reign, hereafter quoted, that fine broad cloths were then imported, but only in small quantities.†

Fuller, in his Church History, very graphically in his quaint manner, describes the introduction of these foreign weavers into England, and the benefits they conferred; and though

\* In Rymer's *Fœdera* Tom. IV, are printed several letters of protection to these Foreign Weavers,—one to John Kemp, of Flanders, maker of Woollen Cloth; another to William de Brabant and Hanckinus de Brabant, empowering them, their men-servants, and apprentices to exercise their mystery in England. It is conjectured that the word Hank, signifying a skein of yarn, came from one of these names.

† Barnes in his History of Edward III., states that Flemish Cloths continued to be imported during his reign.

his account is in some particulars incorrect, yet it is so amusing and curious, that an extract is subjoined:—

“The king and state began now to grow sensible of the great gain the Netherlands got by our English wooll.—In memory whereof, the Duke of Burgundy, not long after, instituted the order of the Golden Fleece, wherein, indeed, the fleece was ours, the golden theirs, so vast their emolument from the trade of clothing. Our king therefore resolved, if possible, to revive the trade of his own country, who as yet were ignorant of that art, as knowing no more what to do with their wooll than the sheep that weare it, as *to any artificial and curious dexterity*, their best cloth then being no better than freeze, such their coarseness for want of skill in their making. But soon after followed a great alteration, and we shall enlarge ourselves in the manner thereof.”

“The intercourse being large betwixt the English and the Netherlands (increased of late, since King Edward married the daughter of the Earl of Hainault), unsuspected emissaries were employed by our king with those countries, who brought them into familiarity with such Dutchmen as were absolute masters of their trade, but not masters themselves, as either journeymen or apprentices. These bemoaned the slavishnesse of their poor servants, whom their masters used rather like heathens than Christians, yea, rather like horses than men, early up and late in bed, and all day hard work and harder fare (a few herrings and mouldy cheese), and all to enrich the churles their masters, without any profit unto themselves.”

“But, oh! how happy should they be if they would but come over into England, bringing their mystery with them, which would provide their welcome in all places. Here they should feed on fat beef and mutton, till nothing but their fulnesse should stint their stomachs; yea, they should feed on the labours of their own hands, enjoying a proportionable profit of their pains to themselves; their beds should be good and their bedfellows better, seeing that the richest yeomen in England would not disdain to marry their daughters to them, and such English beauties, that the most curious foreigners could not but commend them.”

“Liberty is a lesson quickly conned by heart; men having a principle within themselves to prompt them, in case they forget it. Persuaded with the promises, many Dutch servants leave their masters and make over for England. Their departure thence (being pickt here and there) made no sensible vacuity, but their meeting here all together amounted to a considerable fulness. With themselves, they brought over their trade and their tools; namely, such as could not as yet be so conveniently made in England.”

“Happy the yeoman’s house into which one of these Dutchmen did enter, bringing industry and wealth along with them. Such who came in strangers within doors, soon after went out bridegrooms, and returned sons-in-law, having married the daughters of their landlords who first entertained them: yea, those yeomen in whose houses they harboured soon proceeded gentlemen, gaining them estates to themselves, arms and worship to their estates.”

“The king having gotten this treasury of foreigners, thought not fit to continue them all in one place, lest on discontent they might embrace a general resolution



“to return; but bestowed them through all parts of the land, that clothing thereby might be better dispersed. This new generation of Dutch was now sprinkled everywhere, so that England (in relation to her own counties), may bespeak them inmates in the language of the poet :—

“Quæ regis in terris vestri non plena laboris,”

“though generally (when left to their own choice) they preferred a maritime situation.”

EAST.

- 1 Norfolk, Norwich—Fustians.
- 2 Suffolk, Sydbury—Baize.
- 3 Essex, Colchester—Says and Serges.
- 4 Kent—Kentish Broad Cloth.

NORTH.

- 1 Westmoreland, Kendal—Cloth.
- 2 Lancashire, Manchester—Cottons.
- 3 Yorkshire, Halifax—Cloths.

WEST.

- 1 Devonshire—Kerseyes.
- 2 Gloucestershire—Cloth.
- 3 Worcestershire—Cloth.
- 4 Wales—Welsh Frizes.

SOUTH.

- 1 Somersetshire, Taunton—Serges.
- 2 Hampshire—Cloth.
- 3 Berkshire—Ditto.
- 4 Sussex—Ditto.

Fuller's Church History, p. 110, 111, 112.

The fustians specified by Fuller as being manufactured by these foreign weavers at Norwich, were worsted goods, and quite a distinct fabric from those articles of the same name made of cotton. These worsted fustians it may be inferred, were a strong and heavy kind of stuff. Chaucer describing the knight, in the Prologue to the Canterbury Tales says,

“Of Fustian he wered a Gipon.”

It has been conjectured that this was a fabric made of cotton, but the better opinion is, that worsted formed the material; for cotton was then scarcely known, and it remains a question whether the English wore it in any form at that period.\*

\* Fustian is derived from the Spanish word *fuste*, signifying substance. Baines' History of the Cotton Manufacture, p. 41. There is no question that Wool formed the material of Fustians manufactured at Norwich. In the Act of Parliament passed in 1504, hereafter set out, it is recited that in Norwich, time out of mind, there had been a certain craft called Shearmen, for shearing as well Worsteds, Stamins, and Fustians, as also other Woollen Cloth. These three articles were only varieties of Worsted Goods.

“A sumptuary law of James I., passed in the Parliament of Scotland, enacts that “servants shall have no silk on their cloaths, except buttons and garters, and shall “wear only cloth, fustians, canvas, and stuffs, of Scotch manufacture. There can “be no doubt that the fustians here mentioned, if a Scotch fabric, were made of “sheep's wool.”—Idem, p. 95.

Soon after the arrival of these foreigners under the auspices of Edward III., “Norwich,” observes Blomefield, “became “the most flourishing city in all England, by means of its great “trade in worsteds, fustians, friczes, and other woollen manufactures; for now the English wool being manufactured by “English hands, an incredible profit accrued to the people, “by its passing through and employing so many, every one “having a fleece, sorters, combers, carders, spinners, &c.”\* The city must at this time have comprised a population of at least 70,000 souls,† an enormous multitude for the age, and of whom the principal portion of the adults were, it may be assumed, engaged in its staple manufacture. The fact of this large population is strong proof of the extent and importance of the worsted trade in Norwich at this time.

From various notices scattered through the writers of the period, it is evident that Edward III., liberally extended his patronage to the worsted manufacture, and that the citizens of Norwich were especial objects of his favour. The king and the queen very frequently visited the city and partook of its festivities. This was owing probably, in a great measure, to a large portion of the inhabitants being the queen’s countrymen, who would receive her with great enthusiasm.‡

\* Blomefield’s Norfolk, vol. 3, p. 83.

† In January 1348, a great plague broke out in the City, from which time to the following July there died, it is stated upon good authority, 57,374 people in the city alone. Blomefield observes, “the great numbers that all historians agree died “here in this mortality, surprise some, who imagine because there are not so many “now in the whole city, there must be a mistake in the figures, but there is not, “for thus saith the best record—57,374, besides “religious and beggars.” Now “at this time Norwich was in the most flourishing state she ever saw, and more “populous than she hath been ever since, for here were no less than 60 Parish “Churches, besides 7 Conventual Churches within its walls. Another account, “the Book of Pleas kept at the Town Hall, Norwich, mentions that not above “one-third part of the people were alive, the population would therefore be at “least 70,000.” See Blomefield’s Norfolk, vol. 3, p. 92. William of Malmesbury had at a much earlier period described Norwich as famous for its population and commerce.”

‡ The historians of the period mention several occasions when the King and Queen visited Norwich, viz :—In 1340 the King appointed a Tournament to be held at Norwich, and at the same time prohibited all Tournaments being held elsewhere. The King and Queen came in February and stayed some days. In

During this reign Norwich was appointed one of the places where the king's staple should be held, a very high privilege in those days.\* This signal instance of the royal favour so provoked the burgesses of the neighbouring port of Yarmouth, that, in spite, they would not permit vessels to proceed to Norwich until the king had interfered.

Norwich, undoubtedly during the whole of the middle ages, and indeed until a late date, was the great seat and mart of worsted fabrics, so that the history of the manufacture is identified with that of this city. At Worsted in Norfolk, Sudbury in Suffolk, and Colchester in Essex, there were also manufactures of worsted stuffs carried on in the time of Edward III.†

1342 the King and Queen were at Norwich again. In 1344 they visited the city, when the citizens were so much in favour with the Queen, that she obtained as an especial favour, a grant to them from the King of all his royal jurisdiction in it.—Blomefield's Norfolk, vol. 3, p. 86. In 1350 there was a great Tournament at Norwich, at which the Black Prince and (Blomefield thinks) the Queen were present. The Queen occasionally resided at Trowse Hall, near Norwich.

"It was the number of her Countrymen being settled here, as I take it, that "made the King and Queen so often visit this City as they did."—Blomefield, vol. "3, p. 81.

\* Staple in its original sense denoted a place or port to which goods were brought for payment of the customs, before they could be sold or exported. Here the King's Staple was said to be established. Previous to the time of Edward III. the articles upon which customs paid, were Wool, Woolfels, (Woolskins) and Leather, but in his reign Woollen Cloths and Worsteds became articles of the Staple. Those who exported these were termed Merchants of the Staple. They were incorporated, or at least recognized as forming a Society, with certain privileges, in very early periods of our history. In 1313 Antwerp was made the Staple. In 1326 it was removed from the Continent and fixed at certain places within the kingdom. In 1348, upon the capture of Calais, it was made the Staple of Woollen Cloths and Worsteds for seven years. In 1353 the Staple for the different articles exported, was ordered to be held at Newcastle-upon-Tyne, York, Lincoln, Norwich, Westminster, Canterbury, Chichester, Exeter, and Bristol. In 1363 it was held at Calais again. In 1369 it was held at the same places in England, with the substitution of Hull, Boston, Yarmouth, and Queensburgh, for York, Lincoln, Norwich, and Canterbury. In 1376 restored to Calais, and made to comprise *Worsted Stuffs*. The numerous alterations in the places appointed for the Staple, occasioned in these early days great inconvenience in trade.—Macpherson's Annals of Commerce.

† "It seems a great many Flemings settled in these parts at first, as at Worsted,



To further encourage the extension of manufactures from wool, a parliament convened in the middle of March, 1337, enacted: 1st. That it should be felony to transport any wool of English growth beyond the seas, until it be otherwise ordained. 2nd. That all foreign cloth-workers should be received from whatever parts they came, and have privileges allowed them. 3rd. That none should wear any cloths made beyond the sea, except the royal family.\* The words “until it be otherwise ordained” contained in the clause, prohibiting the export of wool, render it apparent that this was merely a temporary expedient for the encouragement of English manufacturers, and that they might have the first choice of their country’s wool, for the king from time to time, according to his prerogative, granted licence to export wool. Such permission it may be presumed would be needed, as the produce of English wool had become so immense as to be, notwithstanding the great increase of our fabrics from it, much more than sufficient for home consumption. Thus every impulse was given to encourage in its infancy the growth of our wool manufacture, and improve its quality.

Prior to the year 1346, the export of woollen cloths and worsted stuffs had so greatly increased as to deprive the king of a large revenue, arising from the export of wool, and to remedy this a duty had been imposed on the cloths and stuffs thus exported, but to render it less distasteful a mitigation was allowed in favour of the home merchant. The imposition of this duty however caused some dissatisfaction, and a petition was in consequence presented to parliament, praying “That

“Norwich, Lavenham, Sudbury, &c., they landing chiefly at Yarmouth and the “adjacent coast.”—Blomefield, vol 3, p. 83.

Suckling in his History of Suffolk, mentions that these manufactures were established at Sudbury in the reign of Edward III. See also Morant’s Essex.

\* Statutes passed 11 Edward III., chapters 1, 2, 3, 4, & 5. The prohibition against the Exportation of Wool, was from time to time dispensed with by the Crown, by virtue of the Writ *Non Obstante*, much used in those days. Very many foreign weavers in addition to those who came six years before, availed themselves of the encouragement offered by these statutes, and settled in various parts of the kingdom. The prohibition of the importation of Foreign Cloth, except for the Royal family, was at a later period of this reign also rescinded.

“the *new custom* lately set, viz: upon every cloth carried forth by English Merchants 1s. 2d., and by strangers 1s. 9d.; and upon every *worsted cloth* 1d., and of strangers 1½d.; and upon every Litt 10d., and of strangers 1s. 3d., might be taken away.” To which answer was made, “That the king, prelates, counts, and ‘*autres gents*’ will that the custom shall stand, for it is good reason that such profit be taken of cloths *wrought within* the realm and *carried forth*, as of wools of the land, rateable the cloth as the sack.”\*

It will readily be gathered from the tenor of this record that the manufactures of woollens and worsteds were staple trades of the kingdom, when after home consumption the export of them had become so extensive. This fact alone overthrows the erroneous supposition that either the woollen or the worsted trade was introduced here in this monarch’s reign, for if either had been an infant manufacture it could not in the time (fifteen years) have attained such a growth.†

Notwithstanding the appointment of Alnager, as before noticed, the weavers and workers in Norwich still continued to make them deficient in length, for as early as the second year of Edward III., parliament enjoined these artizans, probably upon a complaint against the Alnager, to work their stuffs up to a better assize than they had previously done, and directed an enquiry to be made after the behaviour of Robert Polley, the Alnager, to whom the office had been assigned by Peacock. The citizens of Norwich relying on the king’s favour, petitioned to have the patent granted in the time of Edward II., to Peacock, for the alnage of worsted stuffs [see page 45] altogether annulled, and having represented how injurious it was to their trade, as well as expensive, the king ordered it to be recalled, the assay taken off, and free trade for all worsteds to be granted. But Polley still disregarding this order, and contending that the patent could not be recalled during his life, continued to exercise

\* Prynne’s Abridgment of Records, 21 Edward III.

† It will be remembered that the year 1331 is the date when it is commonly supposed these manufactures were here introduced.

the alnage and assay of worsted in Norwich and all Norfolk, whereupon the weavers and merchants of that city, in 1347, presented, through their representatives, a petition to parliament to revoke the patent, and were answered:—"It seemeth to the council that the same ought to be granted for the common profit of all estates," and so "it was revoked, and the Bailiffs of Norwich had a grant of it for a time. But no Alnage here was to intermeddle with the whole woollen cloths, so that at this time the city had the alnage or measuring and sealing of all worsted stuffs only."\*

A very curious account preserved in the Exchequer (and printed by Smith, in his "Memoirs of Wool") of the exports and imports of the kingdom, in the year 1354, is given below:—

State or Balance of the English Trade in the twenty-eighth year of Edward III:—

## EXPORTS.

	£.	s.	d.
One and thirty thousand, six hundred, and fifty one sacks and a half of wool, at £6 value each, amount to ..	189909	0	0
Three thousand, thirty six hundred, and sixty five felts, at 40s. value each hundred at six score, amount to ..	6073	1	8
Whereof the custom amounts to .. ..	81624	1	1
Fourteen last, seventeen dicker, and five hides of leather, after £6 value the last .. ..	89	5	0
Whereof the custom amounts to .. ..	6	17	6
Four thousand seven hundred and seventy four cloths and a half, after 40s. value the cloth, is .. ..	9549	0	0
Eight thousand and sixty one pieces and a half of worsted after 16s. 8d. value the piece, is .. ..	6717	18	4
Whereof the custom amounts to .. ..	215	13	7
Sum of the outcarried commodities in value & custom	£294184	17	2

## IMPORTS.

	£.	s.	d.
One thousand, eight hundred, and thirty two cloths, after £6 value the cloth .. ..	10992	0	0
Whereof the custom amounts to .. ..	91	12	0

\* Blomefield, vol. 3, p. 92.



	£.	s.	d.
Three hundred and ninety seven quintals and three quarters of wax, after the value of 40s. the hundred of quintal	795	10	0
Whereof the custom is .. .. .	19	17	0
One thousand, eight hundred, and twenty nine tuns and a half of wine after 40s. value per tun .. .. .	3659	0	0
Whereof the custom is .. .. .	182	0	0
Linen, cloth, mercery, and grocery wares, and all other manner of merchandize .. .. .	22943	6	10
Whereof the custom is .. .. .	285	18	3
Sum of the inbrought commodities in value and customs	£38970	13	8

Sum of the inplusage of the outcarried above the inbrought commodities, amounteth to .. .. . 255214 13 8

Smith remarks on this account as follows :—

“It is taken from a tract published in the year 1623, entitled, *“The Circle of Commerce,”* by Edward Misselden, merchant, who says he has it from an antient manuscript of a merchant, which manuscript was at that time well known, and of good authority among merchants. It has the appearance of antiquity, and shews the frugality of those times, and in consequence thereof, an extraordinary balance in favour of the nation, such I apprehend comparatively, as no later times can boast of.”\*

“This year (according to common accounts) was but the twenty-second since the woollen manufacture was first set up in England; and though it does not appear that the English had then arrived to the making of the best and high priced cloths, yet were exported this year, according to this account, cloths of a lower price to a greater value by near one third, than all the finer cloths imported the same year amounted to: which is utterly improbable, had not the woollen manufacture in England been of a much longer standing than is generally represented. Again, the value of wool exported in this year appears to be about eight times as much as both imports and exports of woollen goods put together. And yet we shall frequently find this reign celebrated, not only for first erecting the woollen

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\* Macpherson in his *Annals of Commerce*, (vol. 1, p. 554), makes the following pertinent remarks on this. “When we look at the articles, and find that of raw materials for manufacture, which constituted so great a part of the modern imports, there was not one single article imported; and that on the other hand, the exports consisted almost entirely of the most valuable raw materials, and of cloths in an unfinished state, which may therefore be classed amongst raw materials. We must acknowledge that it affords only a proof of the low state of manufactures and of commercial knowledge, among a people who were obliged to allow foreigners to have the profit of manufacturing their own wool and finishing their own cloths, and afterwards to repurchase both from them, in the form of finished goods.”

“manufacture in the kingdom, as if no such thing had been practised before, which “is not true, but (which is equally false) for prohibiting the exportation of wool by a “fixed standing policy from the eleventh year of this king, by which the woollen “manufacture was first established in the kingdom. These are instances of false “history generally current upon this subject, whereon great stress has been laid, and “which therefore are needful to be corrected.”

There seems to be no valid reason for doubting the authenticity of this account, which is vouched by many internal marks, and there is likewise collateral proof that the items contained in it are not fictitious.\* The following observations, subsidiary to those of Smith, arise on this interesting and curious statement:—

Although wool manufactures had so rapidly improved and become flourishing trades, the export of wool, amounting to upwards of 31,600 sacks, is shewn to have been still exceedingly great, larger indeed than in the time of Edward I.; but there are many grounds for believing that the wool grown in England had in the mean time much increased. The duty paid on its export exceeded forty per cent on the value. Though the value is high, £6 a sack, it seems to have been estimated under the actual amount, for in 1342 a sack of wool is estimated at £8 the sack.

The cloths exported ( $4774\frac{1}{2}$  pieces, at 40s. each) it is plain, from the price, were of an inferior coarse description.†

The most curious item however is the large number of worsted stuffs exported, viz:  $8061\frac{1}{2}$  pieces, (double the number of cloths) shewing, after adding the home consump-

\* In answer to a communication addressed to Sir Francis Palgrave, Keeper of Her Majesty's Records, respecting this document, he observes, “it appears to me “to be a Summary collected by some industrious individual from the Public “Records.”

† An additional proof that the Export of Woollen Cloths (under which term in the middle ages Worsteds were comprehended), had become considerable in this reign, is afforded by a Letter from Edward III., to Magnus King of Norway, on behalf of certain Merchants of Norwich, Yarmouth, St. Edmunds, Bury, and Colchester, who had sent a ship to Schonen, laden with Woollen Cloths and Merchandize, to the amount of 2,000 marks, which had been seized by the Officers of the King of Norway. From the places at which the Merchants resided it is apparent that Worsted Goods formed at least a part of the cargo.

tion, that the trade was a very extensive and important one. These worsteds it is apparent were of a fair quality, judging from the price, for in the time of Edward IV., (1480) the value of a piece of worsted of the mean assize, amounted to only fifteen shillings and sixpence.\* That at this period worsted formed a considerable article of export is fully established by nearly contemporary records; for, as previously stated, in the year 1346, worsteds were exported with woollens in such quantities as to deprive the king of a considerable revenue; and in 1348, upon the capture of Calais, it was made the Staple of woollen cloths and *worsted stuffs* for the period of seven years,† and the order printed hereafter permitting merchants of Germany to export worsteds, is confirmatory of the fact.

It will be remarked that the duty on these worsteds exported, amounted to four times the sum charged for customs in 1346 upon worsteds.

Another fact may be elicited from this account, namely, that the English were not able to produce or finish cloth of the finest quality, for 1832 pieces of it were brought in at six pounds each, being three times the value of each piece of cloth exported. Certainly however, the cloth made at home and shipped abroad, was nearly equal in the whole value to that imported; but, “still it seems as if the nation had not yet arrived to the art of making the finest cloth, or however, not in sufficient number according to the consumption of those times.”‡ The enactment prohibiting the import of foreign cloths, contained in the statute passed in 1337, had it is certain, from the wording of an act of parliament made in the twenty-seventh year of this king’s reign, been annulled.

There is proof that in the year 1363 worsted stuffs were exported to Germany, for in a parliament held that year, it is “Ordered that Merchants *aliens*, should not transport wool-len cloths, but the merchants of Almain [Germany] might

\* Harl: M.S., 4780.

† Anderson’s History of Commerce, vol. 1, p. 173.

‡ Ibid. vol. 1, p. 326.



“carry *worsted*s and streight cloths, and that the merchants “of Gascoin [Gascony] might carry woollen cloths to the “value of the wine brought in.”\* This special license to the merchants of Germany to export worsteds, does not imply that home merchants were forbidden to carry abroad these goods, but the contrary. It is evident from an enactment made later in this reign, that the export of yarn made from wool had prevailed, as it is thereby prohibited and ordered to be employed at home in draping.

Poets often transmit to us the most faithful pictures of the manners and dress of the periods in which they lived. None has exceeded in this respect Chaucer, who flourished in the time of Edward III. His description of the Pilgrims in his *Canterbury Tales*, is one of the most vivid and correct pieces of word painting extant. From it we find that the Knight had on, as before mentioned, a doublet of fustian; the Serjeant-at-law a coat of mixed stuff; the Canon was dressed in a cloak, which was no doubt of worsted of the same kind as that specified as Canon’s cloth, in the statute passed in 1467 hereafter quoted; and the Friar had on a semicope or short cloak, of double worsted,

“Of double worstede was his semicope.”

The religious orders of this period used worsteds very much for clothing. Henry de Knyghton speaks also of the Lollards, as being clothed in worsted.

The reign of Edward III., ranks amongst the most glorious and prosperous in the annals of England. Before the close of his long and happy rule, the textile manufactures and trade in general had reached, compared with the circumstances of the age, a mighty growth. Then commenced that rivalry between the aristocracy and the trading classes, which has continued, without intermission to the present day. Before this period wealth was the possession of few; rank rarely attained except by military prowess; and slavery in some of its shapes, the almost universal condition of the

\* Prynne’s Abridgment of Records, 37 Edward III.

lower classes. Now the genius of trade enriched thousands ; conferred the dignity of rank upon merchants and manufacturers ; levelled the strong barriers of the aristocracy ; broke the chains of the serf ; spread the blessings of freedom and plenty, wealth and security over the land ; and raised from their slavish and dependent state the commonalty to the condition of free Englishmen, who by the innate energy and enterprise of their character, and steady perseverance, might amass fortunes for themselves, ennoble their children, and lay for future generations the foundations of their country's commerce and freedom.\*

Abundant testimony is afforded by the records of the period, that the produce of English wool had, in the days of Edward III., reached an immense amount. We have seen from the account of exports in the twenty-eighth year of his reign, that the export of wool amounted to upwards of thirty-one thousand sacks, each weighing twenty-six stones, and valued at six pounds a sack,† much more in quantity than exported in the time of Edward I., when in the ninth year of his reign only twenty-four thousand sacks were conveyed abroad,‡ although there is reason for believing that the manufactures from wool then carried on in England, were comparatively small and unimportant. From an act of parliament passed in the twenty-seventh year of Henry VI.,§ we gather, that in the time of Edward III., the subsidies and customs of the staple of Calais amounted to the enormous sum of sixty-eight thousand pounds yearly, of which by far the greater part would arise from the export of wool. This

\* During this King's reign the Worsted Manufacture flourished in Ireland.

“ In 1360 ” says Macpherson, in his *Annals of Commerce*, “ there were some considerable manufactures in Ireland. The Stuffs called *Sayes* made in that country, were in such request that they were imitated by the Manufacturers of Catalonia, who were in the practice of making the finest Woollen Goods of every kind. They were esteemed in Italy, and were worn by the ladies of Florence, a city abounding in the richest manufactures, and in which the luxury of dress was carried to the greatest extravagance.”

† See page 58.

‡ See page 48.

§ Statute 27 Henry VI., chap. 2.

position is corroborated by a petition from the commons, in the twenty-second year of Edward III., in which they state that the subsidy of wool amounted to sixty thousand pounds yearly.\* Smith, in his *Memoirs of Wool*, and other authorities state that the subsidy of wool was only taken on that exported. Probably however, the most conclusive proof of the excessive quantity of wool then grown in England, may be deduced from the fact, that upon the Scots having in 1354 taken Berwick, and the king being still at war with France, parliament met in this extraordinary emergency and granted to the king for six years a custom of fifty shillings upon every sack of wool sold in the kingdom:† this it is asserted raised a revenue of more than three hundred and fifty thousand marks yearly,‡ upwards of two hundred and thirty thousand pounds, which if multiplied by ten will bring it nearly to the present value of money. To produce so large a sum there must have been sold above the astonishing number of ninety thousand sacks of wool. If on such a subject, and where the data in its very character is to a great extent uncertain, an approximation may be offered as to the amount of wool worked up into cloths and stuffs within the realm, it cannot have been less than about two thirds of the whole produce, for these two reasons, which however, it will be observed are based upon the statement of the amount received in 1354, for the customs of wool sold. 1st. The quantity exported in 1353 amounted to only thirty-one thousand sacks, little more than one third of the ninety thousand sacks sold in the kingdom. 2nd. The customs paid at Calais, the staple for wool exported, amounted to sixty-eight thousand pounds, and the petition from the commons, shewing that sixty thousand pounds was paid for the subsidy of wool,

\* Smith's *Memoirs of Wool*, vol. 1, p. 36.

† Ibid. vol. 1, p. 45.

‡ Sir Walter Raleigh in his *Prerogative of Parliament* says, this subsidy was for every sack of Wool *transported* for six years, by which grant the King received a thousand marks a day. According to Robert of Avesbury, who is supposed to have lived about this period, the Export of Wool had reached 100,000 sacks. Not a tittle of doubt can exist that the Export of Wool was enormous in those days.



prove that only about thirty thousand sacks were exported. If therefore the annual produce of English wool amounted to ninety thousand sacks, and only thirty thousand were exported, the remainder must have been manufactured in the kingdom. These observations are however offered with diffidence, not as conclusive, but suggestive of further investigation on this curious topic.\*

On the death of Edward III., the worsted, as well as the woollen manufacture, though somewhat checked in its progress, still continued to flourish to a great extent in the days of his

\* As further elucidatory of this subject it may be mentioned that the anonymous historian of Edward III., (published along with Hemingford by Hearne, p. 412) states that the King in November, 1337, took up wool to the amount of 30,000 sacks, for which he gave the owners tallies at the rate of £6 per sack, and that of this wool he shipped 10,000 sacks for Brabant where they were sold at £20 each sack. (Knyghton's Col. 2570, quoted by Macpherson vol. 1, p. 519.) It will be observed that the rate here noted of £6 per sack, agrees with the value assigned to the wool exported in 1354, and is therefore confirmatory of the correctness of the account of exports and imports quoted at p. 58. The price would, undoubtedly, be set low by the Royal Woolstapler, as he was the purchaser without competitor. It is evident from the extravagant price paid by the Brabanters for this wool that it was of exceeding fineness of quality, and that it was indispensable for their woollen and worsted manufactures. The following extract from Macpherson, vol. 1., p. 521, exhibits the relative value of the wool in the various counties of the kingdom. In 1338, Edward III., having obtained a grant from Parliament of 20,000 sacks of the wool already shorn, he fixed the price payable in two years, at which the best wool of the several shires should be settled for per sack, namely :—

£. s. d.				£ s. d.			
Hereford .. ..	8	0	0	Cambridge, Huntingdon, Bedford, Buckingham, Essex,			
Salop .. ..	7	0	0	Hertford, Rutland, Berks.,			
Lincoln .. ..	6	13	4	Wiltshire, Southampton,			
Gloucester, Worcester, Chester, Flint .. ..	6	6	8	Derby .. ..	5	0	0
Leicester, Stafford, Oxford, Somerset, York, (except Craven .. ..	6	0	0	Kent, Surrey, Sussex, Middlesex, London, Norfolk,			
Northampton, Nottingham	5	13	4	Suffolk, Lancaster ..	4	0	0
Warwick .. ..	5	6	8	Craven in Yorkshire ..	3	13	4
Dorset .. ..	4	13	4	Durham .. ..	3	6	8
				All inferior Wool as they could agree .. ..			

The above prices being settled by the King were, undoubtedly, lower than the true value.

grandson. Popular commotions either take their rise, or find strongholds in great commercial cities and towns, where the population being dense sooner concert measures to remedy their common grievances. Accordingly the artizans of Norwich were deeply implicated in, and their trade and prosperity suffered much from, the rebellion of Wat Tyler.

While Richard II., occupied the throne many enactments were made in favour of foreign merchants settling and trading in England,\* who had in former periods, to satisfy the home merchants, been restricted in their commercial intercourse with this country.

A multitude of passages in English History prove, that from the first settlement of foreign weavers and merchants among us, they were viewed with suspicion and dislike. In the days of Edward III., it became necessary to give these weavers especial letters of protection† to save them from the violence of the people, who, notwithstanding in some places rose tumultuously, and giving unrestrained vent to the innate jealousy and hatred of foreigners strongly characteristic of the English in those days, broke the looms and other utensils of the intruders, and committed outrages upon their persons. From time to time during the dominion of Edward III., provisions had been made, giving to the English merchant a preference in dealing with the wool, woollens, and worsteds of the realm; but towards the close of his reign, these, in accordance with more liberal views, were in many instances relaxed in favour of the foreigner. In no place did this anti-foreign feeling more display itself than in Norwich, where vast numbers of these strangers resided.

At the commencement of the reign of Richard II., the citizens of Norwich petitioned, “That no *stranger* within “their liberty might there buy or sell any merchandize by “retail;”‡ but this request was not complied with, for im-

\* 2 Richard II., c. 1.—5 Richard II., c. 2.—11 Richard II. c. 9.—14 Richard II., c. 1 are of this class.

† Many of these Letters of Protection are printed in Rymer's *Fœdera*, vol. 4, &c.

‡ Pryne's Abridgment of Records, 1 Richard II.

mediately after parliament passed an act, which after reciting that in the days of Edward III., as also in that present parliament, great complaint had been made of outrages by the citizens upon merchant strangers, declared that they might safely and securely come, and buy and sell wool, cloth, &c., at the fairs and markets in the country, without being restrained or disturbed.\*

Although the worsted trade had for a considerable period been of some magnitude, yet it may be concluded from the following extract, that until about the year 1388 there did not exist any building in Norwich set apart for the sale of worsteds. In that year an ordinance was made "that  
 "no citizen should buy any worsted of any country weavers  
 "in the liberties of the city of Norwich, without they set  
 "their chest in the messuage late of John de Welbournes,  
 "now called the worsted celde, shop, or stall, under the  
 "penalty of forty shillings for the first offence, *four pounds*  
 "for the second, and losing their liberty for the third offence;  
 "and Will. de Eton, and Will. Lomynour were chosen  
 "wardens to take care of this business."† Herein is disclosed, that there had then been recently established in Norwich, a worsted-hall, if a building of such small extent (lately a dwelling-house) deserves that appellation, and that in it the country manufacturers were commanded to expose in chests their goods for sale. As there is no direction where the citizens should bring pieces for sale, probably permission had been given to vend them at their dwellings.

It is plain from the tenor of a legislative provision made in the seventeenth year of Richard II.,‡ that for some cause, but what it is now even vain to conjecture, it had been found advantageous to make a special exception in favour of the export of single worsted. It is declared,

That the merchants and workers of cloths called single worsted, may carry bolts of single worsted to what parts they will, except to the king's enemies, paying the

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\* Statute 2 Richard II., c. 1.

† Blomefield's History of Norfolk, vol. 3, p. 113.

‡ 17 Richard II., c. 3.



customs and subsidies thereof due, without paying the duties of Calais, notwithstanding any statute, ordinance, proclamation, inhibition, commandments, or charters, liberties, usages, or privileges, granted or to be granted to the burgesses of Calais, or to the merchants of the staple of Calais, or to any other made or to be made to the contrary; and that the obligations and sureties taken before this time for the duties of Calais, shall be restored and delivered; provided always, that under the colour of the said bolts of single worsted, they shall carry no double worsteds, nor half double, nor worsteds ray, nor motley, upon pain of forfeiture of the same.\*

From this prohibition it must not be inferred that the latter articles were not allowed to be exported at all; but only that they might not without paying the particular duties of Calais. Five kinds of worsted are above specified, but it may fairly be supposed that other sorts of single worsted were manufactured.

Bolts of single worsted were stuffs of narrow breadth,† perhaps the same as the roll of worsted, thirty yards in length, and half a yard in breadth, mentioned in a statute passed in the year 1442,‡ little more than fifty years after this date.

Double worsteds were a stout fabric. It will be remembered that of this material consisted the semicope of Chaucer's Friar. Pieces of double worsteds measured in 1442, ten yards in length and five quarters in breadth, and half double ones contained the same breadth but only six yards in length.

Worsted rays were a striped or rayed kind of stuff.§

Motley may apparently be classed the same as "motlado," defined in Nares' Glossary as a kind of mottled stuff. In 1467, double motleys are specified as being seven yards in

\* In Prynne's Abridgment of Records, page 334, it is stated, that in the thirteenth year of Richard II., "merchants and artificers of worsted in Norfolk might carry and sell their double worsted to any place or person, being of the king's amity, notwithstanding any inhibition or liberty to the contrary." It is evident that Calais was at this time, as in the previous reign, the staple town; for in the twenty-first year of Richard II., it was enacted that there should be no licences granted to ship merchandizes of the staple to any other place than to Calais, without license to be granted by the king himself.

† Halliwell's Dictionary of Archaisms and Provincial Words.

‡ See page 74 hereafter.

§ According to Stow, (p. 134,) Thomas, Earl of Lancaster had in 1314, four clothes ray for carpets in his Hall, and this is probably the earliest notice of the use of carpets in England.—Macpherson, vol. 1, p. 500.

length, and single ones six yards, both being five quarters in breadth. (See page 79.)

As examples of the worsted productions of this age, the following instances extracted from an account preserved in the *Fœdera*, of a number of articles which the Pope's collector was allowed to carry abroad, may be given:—one great curtain of green serge; six blue curtains for beds; five red bed curtains; two long and two short pieces of red stuff for ornaments to a chamber; two large pieces of red serge, worked with the arms of the pope, the king, and the church, for adorning a hall; one small piece of red serge for a hall; and two garments of Norfolk cloth, one lined with black cloth and another with green. Beds at this period were formed of sumptuous materials, and their curtains often consisted of worsted. Elizabeth, Countess of Northampton, bequeathed in 1356 her bed of red worsted, embroidered; and Sir John Cobham also in 1394, bequeathed his bed of Norwich stuff, embroidered with butterflies;\* and there is no question the above mentioned bed hangings were of worsted, which seems also to have been used in covering walls instead of tapestry; for even the best mansions were then mostly unplastered, and the bare walls covered with tapestry or other woven material, which, when the family inhabiting the place removed, was taken away as furniture. The garments of Norfolk cloth were evidently of very fine worsted, as they were worthy to be lined with black and green cloth. In 1388 a similar license was granted to the pope's collector, to ship a costly bed, with curtains of red tartaine. It may be plausibly conjectured that this was the same as "worsted's ray" before noticed, probably a tartan or party coloured stuff, with red as the predominant colour.†

Large quantities of woollen and worsted cloths still continued to be sent abroad,‡ and very explicit and convincing

\* *Nicolas' Testamenta Vetusta*, vol. 1, pp. 60, 136.

† *Macpherson*, vol. 1, p. 593.

‡ *Hakluyt* gives in his *Collection of Voyages*, vol. 1, page 183, an account of claims made by the English, for piracies or robberies on the sea, committed by Prussians, in which woollen cloths from the following places are enumerated:—

evidence is given, that in this reign the export of wool was even greater than that in the days of his predecessor; for in the fourteenth year of the reign of Richard II., the custom of wool exported amounted over and above poundage, tonnage, alnage, peltage, &c., to £160,000, which at forty shillings a sack establishes the fact that 80,000 sacks passed out of the kingdom.\*

Unquestionably the rule of the house of Lancaster proved detrimental to the progress of the manufactures and prosperity of the nation. The reigns of Henry IV., and of his son Henry V., were of such short duration, and the latter consisted so much of military conquest, that they are almost a blank in the commercial history of our country.†

In the year 1398—Colchester—from John Sadburgh, merchant of Colchester, two packs of woollen cloth, value one hundred marks—from Stephen Flispe and John Plumer, merchants of the same town, two packs of woollen cloths, value sixty pounds—from Robert Wright, merchant of the same town, two packs of woollen cloths, value one hundred marks—from William Munde, merchant of the same town, two fardels of woollen cloths, worth forty pounds—and from John Dawe and Thomas Cornwaile, merchants of the same town, three packs of woollen cloths, worth two hundred pounds.

In the year 1394—Yarmouth—from a ship bound to Denmark and Normandy with woollen cloths, value one hundred marks.

In the year 1394—Yarmouth—to Calais in Normandy, a ship with cloth.

In the year 1394—Lynn—a ship bound for Dantzic with cloth.

In the year 1394—Lynn—from four ships, woollen cloth stolen by certain malefactors of the Hanse to the value of three thousand six hundred and twenty-five pounds, five shillings, and eleven pence.

In the year 1396—Lynn—a ship to Sconeland with cloths, value thirteen pounds, thirteen shillings, and fourpence.

In the year 1397—Lynn—from a ship bound for Dantzic, one fardel of cloths, fifty-two pounds, seven shillings, and sixpence.

In the year 1399—Lynn—from a ship, one fardel of cloth, &c., worth ninety pounds; one fardel of cloth worth fifty pounds; one fardel of cloth, &c., of the value of four hundred and forty pounds; one fardel of cloth, value ten pounds.

It is highly probable from the places whence these cloths were shipped, that they were of worsted, as in the broad designation "woollen cloths," worsteds were frequently in those times included. The manufacture of worsteds was then carried on at Colchester; and Yarmouth and Lynn were the shipping ports of Norwich and Norfolk.

\* Smith's *Memoirs of Wool*, vol. 1, p. 58.

† The Byzantine historian Chalcondyles, gives an account of the observations



By the terms of the answer to a petition from the Burgesses of Lewes, it is apparent, that the staple of worsteds had in the year 1403 been removed from Calais, and probably fixed at Norwich.\* The export of wool still formed the main staple trade of the kingdom, and the chief source of its revenue.†

The boroughs and great towns of the kingdom were in the middle ages not only cities of refuge to the predial slaves of the great landowners, but the extensive demand and high remuneration for labour in these towns, induced the farm labourers to apprentice their children to trades in them, thereby causing a scarcity of hands for cultivating the soil. To remedy this grievance of the landowners, parliament, in the seventh year of Henry IV., prohibited “any man or “woman from putting their son or daughter to be apprentice

of the Eastern Emperor Manuel, who visited England in the year 1400, from which however we gather that manufactures from wool were still considerable in the country. He states that “Britain, or rather England is full of towns and “villages. It has no vines and but little fruit, but it abounds in corn, honey, and “wool, from which the natives make great quantities of cloth.”

See Gibbon's *Decline and Fall of the Roman Empire*, c. 66.

\* Prynne's *Abridgment of Records*, 4 Henry IV.

† Few glimpses are afforded of the real revenue of the kingdom during this period much less of the exports. The following is, therefore, more valuable as containing a statement of the revenue in 1421, which it will be observed is, in the main, still derived from wool.

The revenue consisted of—

						£	s.	d.
Customs on Wool	..	..	..	..	..	3976	1	2
Subsidy on Wool	..	..	..	..	..	26035	18	8½
Small Customs	..	..	..	..	..	2438	9	1¼
Duty of twelve pennies in the pound on the value of goods (the whole amount of which thence appears to have been £164750 15 10)..	..	..	..	..	..	8237	10	9½
						40676	19	9¼
Casual Revenues paid into the Exchequer	..	..			..	15066	11	1
						55743	10	10¼
Total Expenditure	..	..	..	..	..	52235	16	10½
Surplus of Revenue	..	..	..	..	..	3507	13	11¾

Macpherson, vol. 1., p. 635, quoting *Fœdera*, vol. 10, p. 113.

“within any city or town, unless they had lands or rents to “the value of twenty shillings at the least by the year.” To the trade of Norwich especially, this measure proved a severe blow, and prevented its increase, for previously a vast number of apprentices had been kept in that city. The sum of twenty shillings a year, it must be borne in mind, formed a considerable income in those days, and therefore much narrowed the number who were at liberty to apprentice their children.

Some attempts were made towards the close of the reign of Henry IV., to improve the manufacture of worsted, for at the request of the commons, in the eleventh year of Henry IV., “the mayor, sheriffs, and commonalty of Norwich were “empowered to survey and measure all manner of worsted “made, as well within Norwich as in Norfolk wheresoever; “and that none should be sold without their seal, for the “which they should take one half-penny, and that such cloths “as were not of measure should be forfeited, the one half to “the king, the other half to the searchers.”\*

Great feuds had continually prevailed between the native and the Flemish weavers of Norwich, which tended to depress the growth of the worsted trade, but now a better feeling began to exist between them, “and the former petitioned parliament for the incorporation of alien weavers “into the guild of English weavers.”

Worsted stuffs formed part of the wardrobe of Henry V.; in an inventory of it seven yards of red camlet at thirteen shillings and four-pence the remnant, and striped tartain at two shillings a yard are specified.†

The reign of Henry VI., is characterised in the history of the worsted manufacture by an important measure for preventing frauds in the weaving of stuffs. The power given to the mayor and other officers of Norwich to search worsted fabrics, had it seems proved ineffectual in deterring the

\* Prynne's Abridgment of Records, p. 474.

† Strutt, vol. 2, p. 212.

dishonest artizan from making them of improper materials and short lengths, whereby the manufacture declined. More stringent regulations were therefore requisite, and the appointment of special officers to carry them into full effect. The following statute, passed no doubt at the instance of the honest and respectable portion of the worsted makers, in the twenty-sixth year of Henry VI.,\* authorized the choosing of four persons for Norwich and two for the county, to be called wardens, who should search all the worsteds made, and previous to their sale certify that they were of the right length and proper materials. It is therein recited, that formerly worsted was “a good merchandize and greatly “desired and loved in parts beyond the sea,” but on account of “false work and false stuff” in the making had fallen into disrepute. It is also shewn that the manufacture existed in Suffolk, which is put under the jurisdiction of the wardens. But this affords no evidence that the manufacture had recently spread, because in the latter county it was carried on at Sudbury in the time of Edward III. Subjoined is an epitome of this statute :—

Whereas as well in the city of Norwich, as in the county of Norfolk, there be divers persons which make false cloths of all manner of worsteds, not being of the assises in length and breadth as they ought to be, and were of old time accustomed, and the slays and threads pertaining to the same, be not rightfully made and wrought, in great deceit, as well of denizens of the king as of the strangers repairing into this realm of England, which buy and use such merchandise, trusting that it shall be within as it sheweth without, where of truth it is contrary.

And whereas worsted was sometime a good merchandise and greatly desired and loved in the parts beyond the sea, now because it is of false work and of false stuff, no man thereof taketh regard, which is great damage to the king's customs, to the great damage and prejudice of the king's faithful liege people.

Our said sovereign lord the king, willing against such damages and prejudice to provide a remedy in this behalf, hath ordained—

That men of the craft of worsted weavers within the said city shall have power every year at the feast of Pentecost to choose four wardens within the said city of the same craft, and the same wardens to have power to choose other two men of the same craft in the said county, of the said city, and all the same wardens to come

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\* Chap. 10.—The author in the Abridgments of the Statutes found in this work has consulted the Statutes at large printed by the Record Commission, as the best authority.



before the mayor of the said city for the time being the Monday after the day of Corpus Christi then ensuing, and there to be sworn before the mayor to do right, and make due search of all manner of worsteds, and of the stuff belonging to the same, made or to be made within the said city or county.

And that every piece of worsted shall be pursuing through the cloth of right work and good and convenable stuff, and that they shall hold the length and breadth as the assise hath of old time been rightfully accustomed, that is to say :—

The beds of the greatest assise in length fourteen yards largely, and in breadth four yards through the piece.

And beds of the mean assise twelve yards in length and three yards in breadth through the piece.

And beds of the least assise ten yards in length largely and two yards and a half in breadth.

And cloths called monks' cloths twelve yards in length at the least, and five quarters in breadth.

And cloths called canon cloths five yards in length and seven quarters in breadth.

And cloths called *cloths* six yards in length and two yards in the breadth.

And double worsted ten yards in length and five quarters in breadth largely.

And half doubles six yards in length and five quarters in breadth.

And roll worsted thirty yards in length and half a yard in breadth largely.

And that no lamb's wool nor wool called pelt wool shall be put in any of these worsteds.

Power for the wardens to seize defective cloths and stuffs.

The mayor of Norwich and justices of the peace of Norfolk to enforce this act.

Worsteds and stuffs found defective to be forfeited, one half of the forfeitures to go to the king, and the other half to the wardens for the time being of the said craft.

The act to endure for three years.

Nine distinct kinds of fabrics are mentioned in this record, and perhaps comprise every description of worsted then made. The following remarks will throw some light on the qualities or distinctions characterising these articles.

The three first were, for reasons hereafter given, perhaps the finest of worsteds. (See page 80.)

The next three are worsteds for the clothing of the religious, and comprised one kind for the monks and the others for the canons. The cloak of Chaucer's Canon was no doubt formed of the latter material. In the recital of this statute in the one immediately referred to, passed the twenty-third year of Henry VI., the third article merely described above as "*cloths*" is set out as "*cloths called canon cloths.*" All these seem to have been manufactured in lengths suitable for one of the habits of the monastic orders.

Though “motleys” were made in the days of Richard II., we may presume, as they are not here mentioned, that they had fallen into disuse.

The above specified lengths were now the standard measures of Norwich stuffs.

Double worsteds are specified in the act of parliament passed in the seventeenth year of Richard II., (see the observations at page 68). These double worsteds were very likely the same as stammins, hereafter mentioned.

The roll of worsted appears to have been, under a different name, the same as the bolts of worsted. (See page 68.)

As the above act of parliament passed in the twentieth year of Henry VI., continued in force for only the term of three years, the powers contained in it were at the end of that period enlarged by another enactment, (twenty-third year of Henry VI., chap. 3,) for other three years, and four wardens instead of two were appointed for Norfolk. This is however no index that the worsted trade had increased, but that it was found convenient to have four for the county, the same as for the city. The following contains the substance of this statute, which

Recites the last mentioned act, (twenty-third year of Henry VI., chap. 2.,) The king considering the weal of all of his people of his said realm, and in amendment of the said worsteds, and in destruction of all manner of deceit to be done and wrought in worsteds by them that work them, ordained:—

That men of the said craft within the city of Norwich, shall have power every year at Pentecost to choose four wardens of the said city, of the same craft; and also in like manner that artificers of the same craft, dwelling out of the said city, in the county of Norfolk, shall have power every year at Pentecost to choose four wardens, within the same county, of the same craft.

And that all the said wardens shall be sworn before the mayor of the said city, and the steward of the duchy of Lancaster, and shall have full power to survey the work of the said artificers. And that they shall make and work well and lawfully, and shall cause to be ordained such rules and ordinances within the said craft as shall seem to them necessary for the amendment of the said worsted and craft; and that such rules and ordinances by them so made and ordained, to be by the said artificers made and observed, or else be punished by the discretion by the said mayor and steward. And also, that no man of the said craft shall make any worsted except he put upon the same his sign, by the ordinance of the said wardens, or otherwise the said worsteds shall be forfeit to the king.

Power for the said wardens, as well within the city of Norwich as within the

counties Norfolk and Suffolk, to search all manner of worsteds, as well within the looms as out the looms, and such as be found defective to be forfeit.

The act to continue three years.

The rules and regulations to be certified by the king and council.

Printed in Hakluyt's Collection of Voyages, there is an old tract written in 1436, entitled "The Libel of English Policie, exhorting all England to keep the sea," which contains an amusing but valuable description of the foreign trade of England at that time. From it a few extracts may be gleaned, shewing that wool was then largely exported, and woollen cloth both brought into and carried out of the kingdom. It may here again once for all be noticed, that in the middle ages, and in truth until a late period, under the term "*woollen*," both woollen and worsted articles were included, the distinction between them being very often omitted, wherefore, from time to time in the course of this work, it is needful to allude frequently to woollen cloth (as including worsted) which to a modern reader, without this explanation, might be considered foreign to the present subject.

English cloths, both woollen and worsted, were principally at this period exported by Italian merchants. The "Libel of English Policie" mentions that the Genoese brought "divers merchandize," with cloth of gold, silk, &c.;

And then be charged with wolle againe I wenne,  
And wollen cloth of ours of colours all,  
And they adventure as ofte it doth befall,  
Into Flanders with such things as they bye  
That is their chief staple sekerly.

Also that the Venetians came with rhubarb, senna, scammony, and such "*licking stuff*," and took in exchange for these cloth and wool.

It is evident from this old author, that much fine cloth still continued to be imported from Flanders, for he mentions among the commodities imported thence:—

Fine cloth of Ypre that named is better than ours,  
Cloth of Curtrike, fine cloth of all colours,  
Much fustian, and also linen cloth,  
But Flemings if ye be not wroth,  
The great substance of your cloth at the full,  
Yee wot ye make it of our English woll.



Another passage shows, that the manufacturers of Flanders were, for the purposes of their trade, compelled to mix the Spanish wool purchased by them, with English wool, partly because the latter was of longer staple, and therefore the better fitted for the production of worsteds, which is well known to have been now extensively made in that country:—

The wolle of Spaine it cometh not to preffe,  
 But if it be costed and menged well  
 Amongst the English wolle the greter delle—  
 For Spanish woole in Flanders draped is,  
 And ever hath bee, that men have minde of this;  
 And yet wool is one of the chiefe marchandy  
 That longeth to Spaine who so well espie,  
 It is of little value trust unto mee  
 With English wooll but if it menged bee.

Strict proof may be adduced that from a very early period English wool was deemed to be superior to Spanish. In the confirmation by Henry II., to the weavers of London of their guild, it is directed, that if any weaver mixed Spanish wool with English in making cloth, it should be burnt; plainly implying that the English wool was of superior quality. It seems probable that after the time of Edward III., the fleece of Spanish sheep had improved, in consequence of a number of English sheep being permitted by that monarch to be exported to Spain.

From Capmany's History of Barcelona, it appears, that about this period, English wool was sometimes sent to that city to be manufactured into the finest cloth then produced. Spain and England were in this age the only wool-growing countries in the world; but that produced by the former consisted of an inferior staple, altogether unfitted of itself to make the delicate and superior fabrics of Flanders. Hence it is highly probable that large quantities of our Norfolk long wool, peculiarly adapted for making worsted, were now sent abroad, and that without this wool the foreign maker of such descriptions of woven goods was at a stand.

In the third year of Edward IV., every man, unless he possessed the yearly sum or value of forty shillings, was prohibited wearing any fustian, bustian, or fustian of Naples,

or scarlet or cloth in grain. Fustian of Naples (if not some of the others also) was a worsted production.\*

Among the statutes of the realm is preserved a document whence we obtain many important and interesting particulars relating to the worsted trade in this age, reducible into four heads :—

1st. The manufacture, although considerably decayed, was locally spread over Norfolk, Suffolk, and Cambridgeshire, and (as we learn from another source) also Essex. The first-named county however still continued to be its principal seat.

2nd. It is manifest that the worsted manufacturers had become an exceedingly dishonest class, making “untrue wares” of all manner of worsted, not being of the assizes in length “nor in breadth, nor of good stuff and right making as they ought to be and of old time were accustomed,” and that these disreputable tradesmen suffered a just punishment for these malpractices by the decay of their trade.

3rd. That in times past worsteds were “well liked and greatly desired and esteemed” abroad, denoting at a former “period a large export trade in them.”

4th. The export of these articles had become small, because they “were not right making nor good stuff,” but “reported and called subtle and unlawful merchandize and of little reputation” in foreign countries, to the great injury of the realm.

The following are the recitals and provisions of this statute passed in the year 1467 :—

Whereas there be, as well within the city of Norwich, as elsewhere within the county of Norfolk, divers persons who do make untrue wares of all manner of worsteds, not being of the assizes in length nor in breadth, nor of good stuff and right making, as they ought to be, and of old time were accustomed, and the sleyes and yarn pertaining to the same not well made and wrought, in great deceit, as well of denizens as of strangers inhabiting or repairing into this realm, which have used and do use to buy such merchandizes, trusting that they were within as they seemed without, where indeed it is contrary.

And whereas the worsteds in time past were lawfully wrought, and merchandizes well liked and greatly desired and esteemed in the parts beyond the sea, now because they be of no right making nor good stuff, they be reported and called subtle and unlawful merchandize, and of little reputation, to the great damage of our said lord the king, and great prejudice of his faithful people.

\* Strutt, vol. 2, p. 225.

It is therefore enacted that the men of the craft, that is the worsted weavers, were authorized every Whitsun Monday to choose four wardens of the same craft, living in the city, and the artificers of the same craft in the county of Norfolk, the same day to choose four wardens of the craft for the county, all which wardens shall come on the Monday next after Corpus Christi, and be sworn before the mayor of the city, and the steward of the duchy of Lancaster, if he be in the county and present, else before the mayor only, and all the said wardens or else the greatest part of them as well within the city as without, shall have full power for the year next following, to survey the workmanship of the said artificers, and that they make and work rightfully and well, and good stuff, and make such rules and ordinances as they shall think meet for the amendment of the said worsteds and craft.

The wardens to have full power to search all worsteds in Norwich, Norfolk, Suffolk, and Cambridge, as well in the loom as out, and to convene any persons that are faulty or disobedient to their ordinances before the mayor or steward, who shall punish them at their discretions, and every man shall put his proper mark on every piece, under pain of forfeiture.

The wardens shall assign a certain place or two in the city and others in the county, and certain days every week, when every piece shall be brought and searched by them, and if approved they shall fix their token or seal thereto, without fee or reward; and all mayors, sheriffs, and bailiffs, when the wardens require them shall be attending, aiding, and supporting them in their search.

And that they shall hold the length and breadth as the assize was wont to be of old time rightfully accustomed, that is to say:—

Beds of the greatest assize fourteen yards largely in length and four yards largely in breadth.

Beds of the mean assize twelve yards in length and three yards in breadth.

Beds of the least assize ten yards in length and five quarters in breadth.

Cloths called monk's cloths twelve yards in length at the least and five quarters in breadth.

Cloths called canon cloths of the one assize six yards in length and two yards in breadth, and of the other assize five yards in length and seven quarters in breadth.

Double motleys seven yards in length and five quarters in breadth.

Single motleys six yards in length and five quarters in breadth.

Double worsted ten yards in length and five quarters in breadth.

Half-double worsted six yards in length and five quarters in breadth.

The roll of worsted thirty yards in length and half a yard in breadth.

And that no lambs' wool be put in any of the said worsteds.

This statute (which in 1468 was extended to Essex) is in many respects similar to that passed in the twentieth year of Henry VI., (1442) especially as respects the description of the cloths, but it has been considered better to print both in substance, so that the reader may have a full view of these important documents and mark the variations in them. From



the Statute Book can alone be gleaned the greater portion of the information respecting the worsted trade in the early periods of its history, which must serve as an apology for the insertion in this volume of so much of the verbiage of acts of parliament.

The observations made on the former statute apply to this, but the following may be added :—Beds (as they are termed) of the greatest, mean, and least assize, appear to have been fine stuffs, for in a M.S., of the period, being an Inventory of the Wardrobe of Edward IV., taken in 1480, red worsted of the most assize is set down of the value of 33s. 4d. a piece, about 2s. 4d. a yard ; red worsted of the middle assize 15s. 6d. a piece ; and red worsted the least assize 10s. 6d. the piece.\* From the price, considered according to the value of money in that age, these may be classed as fine worsted textures.

Single and double motleys, now and also in the time of Richard II., manufactured, were probably, as before observed, the same as “ motlado,” a kind of mottled stuff.

Their will motlado is  
Of durance their hate.

*Wit's Interp.: page 10.*

Short as the reign of Richard III., proved to be, many enactments were through his instrumentality passed, which evince a strong desire to foster manufactures and promote the trade of the kingdom. But to court popularity among his subjects and fix himself more surely in power, he sanctioned the passing of an act of parliament prohibiting merchants of Italy from selling wool or its fabrics within the realm, or making cloth therein.† Of fifteen statutes passed during the two years he occupied the throne, seven of them applied to trade in general, but as they do not relate specifically to the subject of this work, need no further notice, except to show that on the face of them it is clear wool still continued to form an important article of export.

\* Harl. M.S., 4780.

† 1 Richard III., c. 9.

From the date of Henry IV. ascending the throne to the battle of Bosworth Field, England had, during the larger portion of the interval, been a scene of war and bloodshed; and owing to these intestine commotions, and the artizans being arrayed under the banners of the hostile houses, the clothing arts gradually languished and decayed, so that the fame of England abroad for woven productions, especially worsteds, became at last from the smallness of their export, well nigh extinct.

With the reign of Richard III., the middle ages may with propriety, be said to close; and it will be both useful and interesting to note, that at this time worsted stuffs were manufactured for three general purposes:—

1st. For the apparel of both men and women; the stouter fabrics, for the former,—and the lighter and finer kinds, for the latter. It is very apparent that worsteds were extensively worn by all classes in England, from the time at least of Edward II.

2nd. For the clothing of the religious, very many of whom were habited in worsted; three sorts were made for this purpose—monk's cloth and two descriptions of canon's cloth. As before mentioned, the Lollards, who professed to be reformers in religion, and neat but simple in their dress, wore worsted.

3rd. For curtains, bed furniture, and other articles of upholstery,—worsted was very largely applied to this use in the middle ages. In an Inventory of articles in the palace of Henry V., contained in the Rolls of Parliament, are very many of worsted, such as coverlets, tapestries, hangings, bed curtains, and so on.\* Very frequently during that period, beds are in wills bequeathed by the description of "my worsted bed," or "bed of Norfolk stuff," and in such terms as to imply that beds so furnished were valuable bequests. Many instances appear in Nicolas' *Testamenta Vetusta* of bequests of worsted bed hangings. In 1409,

\* Rolls of Parliament, vol. 4.

Elizabeth, Lady de Spenser, by her will, gives to her daughter a bed of red worsted, with the furniture appertaining thereto. (Nicolas, vol. 1, p. 175.) Joane, Lady Bergavenny bequeaths to John of Ormond a bed of cloth of gold, with 'lebardes,' with those cushions and tapettes of her best red worsted, that belonged to the same. (Vol. 1, p. 226.) Lady Conyers in 1460, bequeaths the hangings of red worsted at Skelton Hall. (Vol. 1, p. 298.) Lady Elizabeth Andrews in 1474 disposes by her will of her bed of red worsted, with all the hangings. (Vol. 2, p. 329.) See also 'Testamenta Eboracensia,' published by the Surtees' Society.)

The art of dyeing prevailed, it would seem, only in a rude state in this country, in these early times. The colours of worsted fabrics were imparted, as now, in two modes; first by weaving the colours into the stuff, and secondly by the ordinary method of dyeing. In a Record of the period of Henry IV.,\* are classed as worsted stuffs, the following, namely Motleys, Paules, Checks, and Rays, (as well as Figures and Plains), which it is probable were woven in colours in the loom. The dyes principally used were two kinds of red, that is, a bright vermillion red, and a common one; green, blue, and black. Worsted stuffs used in the palace of Henry V., were principally red, which seems to have been a favourite colour. The English appear in these ages to have been inexpert in dyeing and finishing worsteds, as it is evident from many testimonies that the finest of our stuffs underwent those processes abroad, and were thence reshipped to this country.

\* Rolls of Parliament published by the Record Commissioners, vol. 3, p. 637. Here are enumerated worsted beds, as they are termed, of the three assizes before mentioned, but with the addition of being described of two kinds, double and single; also bolts of worsted of two assizes, that is to say, one assize containing thirty yards in length and two quarters in breadth, called 'Thirty yards Straits,' the other containing thirty yards in length and three quarters in breadth, and termed 'Thirty yards Broad;' the worsteds called 'mantelles,' single, half double, and double, as well as "motles, paules, checkerers, raies, flores, and pleynes." Also monk's cloths and chanon's cloths of three kinds, singles, doubles, and demy doubles.



## CHAPTER V. \*

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Encouragement afforded to the Clothing Arts by Henry VII.—His reign a great epoch in the History of English Liberty.—Invites Flemish Weavers to settle here.—Gives a Pre-emption of Wools to the English Manufacturer.—Great Commercial Intercourse with the Netherlands.—Merchant Adventurers.—Com-motions among the Shearmen of Norwich.—Decline of the Worsted Trade in the time of Henry VIII., in whose reign many Enactments passed respecting it.—Frauds in finishing Worsted Stuffs.—The Export of Norfolk Wools and Worsted Yarn forbidden.—Notices of Worsted Fabrics at this period.—The Growth of Wool had decreased and its price risen.—Progress of the Manufacture in the reigns of Edward VI., and Mary.—The home consumption of Wool equal to the supply, and the Export of it nearly ceases.

WHEN Henry VII., became firmly seated on the throne, and united the claims of the rival houses by his marriage with Elizabeth of York, he prudently endeavoured to restore the clothing arts and the general trade of the kingdom to their former condition. It is a singular fact that his reign, like that of Edward III., is also distinguished as one of the most brilliant eras of English liberty, shewing that freedom and manufactures are inseparably conjoined. It became part of his wise policy to curb the turbulent spirit of the powerful barons, which in former reigns had been the source of most of the national commotions, and to carry more effectually this policy into effect, he encouraged the enrichment and elevation of his subjects by means of trade and commercial enterprise. He likewise invited numerous Flemish clothing manufacturers to settle in his dominions, and during his reign the woollen and worsted trades from a state of decay, spread and increased so

greatly, as to lead some authors into the mistake of attributing to him the introduction of these arts into the kingdom.

So anxious was the king to promote the commercial prosperity of his subjects, that soon after his coronation, the lord chancellor in opening the session of parliament stated, that the king desired that matters of trade, as also the manufactures of the nation, should be taken into consideration, and to advance that object, Lord Bacon adds, in his valuable *Life of this Monarch*, that statutes were in this parliament made "for the maintenance of drapery, and for keeping of wools in the kingdom." The export of wool was however not altogether forbidden, but the domestic manufacturer obtained a pre-emption or first choice of wool, which had for a long period previous, especially Norfolk wool, been shipped abroad to the great detriment of the clothing trade at home, it being declared that "no person during ten years following, should buy, take, promise, or bargain for, any wool before the fifteenth day of August in each year, except such person as intended to make cloth or yarn thereof, nor any merchant stranger before the second of February after," thus allowing the home manufacturer to be first satisfied, and then the residue to be sold to the foreign merchant, who however paid the heavy custom of three pounds, six shillings, and eightpence the sack, double that imposed on denizens.\*

The English at this period were extremely desirous to maintain friendly relations with the Flemish, for the trade between them, especially in cloths and stuffs, was so important that it could not be interrupted without both being sufferers. But the countenance given to the Pretender Perkin Warbeck,

\* 4 Henry VII., c. 11, quoted in *Smith's Memoirs of Wool*, vol., 1, p. 74.

This act appears to have been wisely framed, with a threefold design:—first, to give the English Manufacturer for a season, viz:—from shearing time to the fifteenth of August, the choice, the exclusive privilege of buying the clip from the growers before it came into the hands of the dealers: next, that the growers should not be compelled to take an insufficient price, another market was provided for some months, namely, with the home dealers; and that they might not have it in their power to unduly depreciate the prices, the foreign merchant was allowed to purchase the unsold wool in the February following.

by the Governor of the Low Countries, induced Henry to change the staple for cloth, worsted, and other English merchandise from Antwerp, where it had long been established, to Calais;\* and to break off all commerce with the Flemings, which for a season caused great injury to the English manufacturers; but soon a treaty of commerce, called by way of eminence "The Great Treaty" was concluded between the two countries, and much in favour of the English. The Merchant Adventurers† incorporated in this reign, had become a strong and rich body, and they greatly assisted the king in forcing the Flemings to offer advantageous terms of peace, by purchasing the cloths and stuffs of the kingdom as usual, "though they lay dead upon their hands for want of vent."‡

A very injurious effect had been produced upon the trade of Norwich, by the law passed in the seventh year of Henry IV., before noticed, restricting the taking of apprentices, and great exertions were therefore now made by the worsted artizans to obtain the repeal of the obnoxious measure, which seconded by the liberal policy of the State, proved successful in the eleventh year of this king's reign. In the aftermentioned record it is set out, that the *especial* cause of the waning of the prosperity of Norwich arose from the restrictions respecting apprentices, but to that extent such was not the fact.

\* Lord Bacon observes in his Life of Henry VII., that the disadvantage of this removal was wholly on the side of the Flemings, because the mart commonly followed the English cloth, so immense it seems was its export at the present time. See Smith's Memoirs of Wool, vol. 1, p. 75.

† The Merchant Adventurers were an ancient trading community, having their origin at least as early as the time of Edward III., who granted them many privileges. They had afterwards charters granted to them in the reigns of Henry IV, Henry V., Edward IV., Richard III, and also in the reign of Henry VII., when they were first called by the distinctive name of Merchant Adventurers, implying that they adventured their merchandize abroad. They particularly dealt in cloth, both woollen and worsted, and had now become a very affluent trading body. Lord Bacon observes in his Life of Henry VII., that they were at this time a strong company, well underset with rich men and good orders. The company obtained in 1505 a royal charter, in which are confirmed to them as "merchants trading in "woollen cloth of all kinds to the Netherlands" their former privileges, and in this charter they were first properly styled the Merchant Adventurers of England.

‡ Lord Bacon's Life of Henry VII.



Another statement contained therein, namely, that by reason of the above mentioned prohibition, the young people of the city had grown to idleness and vice is apparently unexaggerated, because according to the custom of the times no one could exercise a trade within a corporate town, unless he had served an apprenticeship to it, and all the poor weavers who did not possess rents or lands to the amount of twenty shillings yearly, could not apprentice their children.

The Statute passed in the eleventh year of Henry VII., chap. 11,—

Recites, that whereas the city of Norwich, which is an ancient city, is greatly decayed, the especial cause whereof is, forasmuch as there is a statute made at Westminster in the seventh year of king Henry IV., containing among other things, that no man nor woman shall put their son or daughter to be apprentice within any city or town within this realm, but if they have lands or rents to the value of twenty shillings at the least by the year, and that to be testified under the seals of two justices of the peace where the said child was born; by force of which statute many and divers great vexatious troubles and losses have been done to the citizens of the said city, as well for the receiving of their own children as other to be their apprentices, whereby the most substantial crafts in the said city called worsted weavers and clothiers, by which crafts the weal of the said city hath and should be maintained, supported, and continued among other divers crafts there used, be greatly decayed, by reason whereof the young people of the said city be grown to idleness, vices, and other misgovernances, and if no remedy herein be had, it is like to be the utter destruction of the said city :

It was enacted, that the citizens of Norwich might take as apprentice, the son or daughter of any person, without regard to that Act.

In the succeeding year the like relief was granted to the worsted weavers in the county of Norfolk.

In the twelfth year of Henry VII., chap. 1, an Act passed for taking apprentices to make worsteds in the county of Norfolk,—

Recites, that the common weal and profit of the inhabitants of Norfolk have in times past been by the due making of worsteds, says, and stamyns, which occupation was like to decay, by reason of the occupiers not having any apprentice, unless his father should be worth in land twenty shillings a year :

It was enacted that worsted makers of Norfolk might take one or two (not more) of the children of any person to be apprentices.

A body of shearmen had been established in the city of Norwich from a very remote period, but in 1495 an act of parliament, hereafter in substance printed, was obtained,

whereby the shearers of worsted were constituted a separate class.

Moreover where in the said city in time past hath of long time been used, that there should be no man take upon him to shear worsteds, called ten yards stamyns, nor any other worsteds, but if he had been apprentice to the occupation of shearing of worsteds by the space of seven years, so that he might have the knowledge and cunning in that craft; how be it now of late many and divers persons as well aliens strangers as other forens not dwelling nor inhabited within your said city by supportation and maintenance of divers persons, inhabitants in the said city for their singular lucre take upon them this occupation of shearing of worsteds and stamyns, which have not the sight nor cunning in that occupation, nor have been apprentice to the same, by whom great hurts and divers losses have been for default of cunning, by cutting and otherwise of the said worsteds, to the owners and others of your subjects, in this your realm; infamy also, and slander, as well to the occupations of worsteds and worsted shearmen as to the merchants, which put them so hurt and cut in the shearing to sell, and if ready remedy be not had in these premises and reformation, both the said occupation of worsted making and also of worsted shearing, which God forbid, is likely to be destroyed for lack of good policy and order:

It was enacted that none should shear worsteds in Norwich, unless he had been apprentice thereto for seven years.

Persons not being shearmen should not employ shearmen. Masters of the said occupation to search the said worsted shearing.

Ordinances of the shearmen to be approved by the mayor.

This is the first time that the term “stamyn” has been observed, and the length being the same as double worsted, (ten yards,) and their names implying a fabric stout and durable, they were, it is highly probable, the same article. In an appraised inventory of goods, taken in the year 1500, black stamyn is set down at 2s. a yard, and tapestry for hangings at 1s. a yard;\* these prices ranged, it may be assumed, below the real value of the articles when new.

The general shearmen of both woollens and worsteds in Norwich considering themselves aggrieved by the introduction of these worsted shearers separate from their craft, created a great disturbance, and ultimately petitioned parliament to rescind the above provisions; stating that formerly they had obtained by their occupation a decent livelihood, but were

\* Appraised Inventory of the Property of Thomas Kebeel in Gentleman's Magazine, 1768, p. 257.

then reduced to want, and parliament in accordance with their prayer repealed this obnoxious enactment, as follows :—

The Statute passed in the nineteenth year of Henry VII, chap. 17,—

Recites, that whereas the city of Norwich is an ancient city, and in the same city without time of mind among other crafts hath been used a certain craft called shearmen's craft, and the artificers of the same have always used by the same time to shear as well worsteds, stamyns, fustians as all other woollen cloths; and all apprentices of the same craft have been taken and bounden to shearmen's craft only, and by reason thereof they have had and enjoyed their liberties and freedom in their occupation by the name of shearmen's craft generally, and none otherwise, and they have every year used within the said city to be chosen and sworn two wardens of the same craft, and all defaults by the said wardens in their craft founden, to be presented before the mayor of the said city for the time being, and the offenders in that behalf to be punished according to the custom of the same city; till now of late time divers persons for their own singular profit, contrary to the common weal of the said city, feynnyng to have a craft of worsted shearing separate from the said craft of shearmen's craft, surmitted a bill in the parliament holden at Westminster the fourteenth day of October, the eleventh year of the reign of our sovereign lord the king, that now is, by force of which pretended bill it was in the said parliament enacted and ordained, that from thenceforth no man should take upon him to shear worsted within the said city, but if he had been apprentice to the said occupation of worsted shearing by the space of seven years, or such other as the masters of the said occupation within the said city for the time being approving their cunning, without the advice of the mayor for the time being in the said city will admit. And furthermore in the end of the act, it was provided that the said occupation of worsted shearing shall not make nor do to be made any ordinance concerning the said occupation among themselves, but such as the mayor of the said city for the time being, with his bretheren aldermen shall think necessary and profitable for the weal of the king's subjects; as more plainly in the said act among other things doth appear :—It is so that since the making of the said act, by colour of the same, the worsted shearmen within the said city, within themselves, without the advice or consent of the mayor of the said city, have chosen wardens of worsted shearing, and separated the same pretended craft from the aforesaid craft called shearmen's craft, contrary to the liberties and good customs of the said city, in time passed used and approved; and of that the said pretended wardens intending to bring the shearing of worsteds into few hands and to enhance the price of shearing of worsteds, and that they would not admit to the shearing of worsteds, but of certain persons upon payment of heavy fees, where many other in the city be as perfect and have as great cunning, so that a great many of them have departed from the city and many houses decayed, to the desolation of the city and impoverishing the merchant buyers of the said worsteds.

Therefore the act was totally repealed.

No doubt the proximate cause of the repeal of the statute, constituting the shearers of worsted a separate class, arose from the wardens of the shearmen's craft or fellowship, having



acted independently and without the sanction of the mayor, but there seems to have been also a strong objection on the part of the State to these kinds of fellowship.\* It will be observed that the fabric termed fustian is here alluded to and distinctly shewn to have been made of wool. These shear-men were a similar description of operatives as the 'croppers' of woollen cloth. It is evident the dressing and finishing of worsteds was at this time very much like that of woollen cloth.

There were at this period three descriptions of foreign cloth and stuff merchants, namely, the general merchants of England, who traded to Spain, Portugal, France, Italy, and other countries;† the Merchants Adventurers of England, as they were designated by royal charter, who had the exclusive privilege of exporting cloths and stuffs to the Netherlands, and had their principal depot at Antwerp; and lastly the German merchants of the Steelyard, London, who traded principally to the Hanse towns and other parts of Germany.‡

Important events in connexion with commerce and trade had occurred during this reign. The spirit of maritime discovery had awakened, after a slumber of ages, and the acquisition of America followed, whence ensued a vast importation of the precious metals, changing the currency of England and all Europe, and giving a gigantic impetus to the

\* The by-laws made by corporations, or fellowships, of crafts, guilds, and fraternities, had by this time become very oppressive and pernicious to trade, so much so, that Lord Bacon styles them fraternities in evil. An act of parliament was in this reign (19 Henry VII) passed, to restrain these fraternities, or fellowships, from further promulgating injurious by-laws or ordinances.—Macpherson, vol. 2, p. 16.

† Very many of the great towns of England had companies of merchants in these ages, but they traded in all kinds of merchandise, and were not exclusively cloth or stuff merchants. They made frequent complaints against the monopolies of the merchant adventurers.

‡ In this king's reign the merchants of the Steelyard, (so called from having their Hall or House of business in the Steelyard, London,) obtained a confirmation of all the ancient privileges, liberties, free usages, and customs, which they had in former times enjoyed: but they were prohibited by Henry VII., from carrying any English cloths or stuffs to the place of residence of the merchant adventurers in the Low Countries, under a penalty of two thousand marks. These merchants of the Steelyard were also called merchants of the Hanse towns, in Germany, and sometimes Easterlings, and were much engaged in the cloth and stuff trade.

concerns of trade and manufactures. Printing had been newly invented and introduced to this country, where the human mind, like a field which had long lain fallow, was ready to receive the seed, whether of commerce, manufactures, literature, or whatever concerns the progress and civilization of the world's family, and bring forth hereafter a mighty crop of good fruit.

Under the dominion of Henry VIII., the worsted manufacture on the whole declined,\* and although numerous attempts were made by the legislature to promote its increase, it does not seem during the term of this reign to have fully recovered from the state of decay into which it had fallen. This position is apparent from many passages contained in the following pages.

The woollen and worsted manufacturers of the middle ages resorted to numberless dishonest expedients in making and finishing their fabrics, which had caused many of these to fall into disrepute, and the statute book is loaded with provisions to prevent and guard against such injurious practices. In the time of Henry VIII., a fraudulent method had been adopted of finishing worsted stuffs, by calendering dry instead of wet, which caused the stuffs to shew spot and foul when exposed to rain. This practice had been imported from abroad, and many foreigners called 'dry calenders' had settled at Norwich to exercise their craft. So numerous were the complaints respecting the pernicious process of dry calendering, that an act of parliament was passed in 1513 to remedy the evil. (5 Henry VIII., chap. 5.)

An act made "to avoid deceit in worsteds," and none were to be wet calendered but only by persons bound apprentices seven years to such craft, and their cunning

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\* Blomefield's Norfolk, vol. 3, p. 83, who after speaking of the settlement of the foreign worsted weavers in Norwich, in the reign of Edward III., observes, that the manufactures they introduced had ever since been the chief support of the city, "but began to decline about the time of Henry VIII., and did not revive until "the reign of Elizabeth."

and craft admitted by the mayor of Norwich, and two masters of the craft, either in Norwich or Norfolk, the craft of wet calendering of worsteds having been used well and substantially in times past and still is in the same city,—

Reciting, that worsteds truly made, shorn, dyed, and calendered as of old times had been accustomed to be made, shorn, dyed, and calendered, have been one of the goodliest merchandizes and greatest commodity for this realm, and not only worn within this realm, but also much worn and used in other realms, and so it is that now of late divers strangers beyond the sea have taken upon them to dry calender worsteds with gums, oils, and processes, so that a coarser piece of worsted not being past the value of twenty-six shillings and eight-pence, is, and shall be made by their gums, oils, and processes, to shew like to the value of forty-shillings or better; and if the same worsted so dry calendered taketh any wet, incontinent it will shew spot and shew foul, and ever after continue still foul, and will not endure, to the great deceit and hurt of the wearers thereof, and loss of the same. And for the said deceits and falseness, the said dry calendering is shunned and abhorred in the parts beyond the sea, so that no person do, nor shall use in those parts any such worsted so dry calendered. And also now of late, the said strangers called dry calenders are come into this realm, and here within the same using the said dry calendering, to the great hurt of the said commonwealth and commodity of this realm aforesaid.

It was therefore enacted that no person should dry calender worsteds under pain of one hundred shillings.

The act to continue until the next parliament.

An index is here given to the prices of worsted pieces at this period, ranging from 26s. 8d. for the coarser kinds, to 40s., for the finer descriptions of stuffs. It is also mentioned that the ‘dry calenders’ used oils and gums to stiffen and make appear better the coarse articles.

In the twenty-fifth year of Henry VIII., chap. 5, the above mentioned act was made perpetual, and it was further enacted that no dyer of worsteds, stamyns, and says, should calender them, under pain of forty shillings for every piece.

Lord Herbert, in his life of Henry VIII., relates “it was “provided, that *no unwrought* wool should be exported out “of the kingdom, for the encouragement of the woollen “manufacture.” This unlimited statement is incorrect; for although, in consequence of the inclosure of land, and the extensive conversion of it into tillage, the produce of wool had diminished in comparison with that of earlier times, and become barely sufficient for the home clothier, so that the export of it had nearly ceased; yet the statute book at this



period did not contain any prohibition against the exportation of unwrought wool, except that of Norfolk sheep. For ages, exceeding attention had been paid to the improvement of the fleece of this breed, upon which depended the staple trade and prosperity of the district; and because of the fineness and length of its staple, and particular adaptation for making worsteds, it had, from a remote period, been much sought after by the continental worsted weaver, and by various illegal means conveyed abroad. Now however, the export of it had become so extensive to supply the foreign maker of says, russels, and worsteds, &c., as to threaten the extinction of the home manufacture: a remedy for this national injury was devised by a law passed in the sixth year of Henry VIII., which tended greatly to revive and encourage the drooping domestic manufacture, whereby it was declared, “that none “should carry beyond sea any Norfolk wool meet for making “worsted or stammins, upon forfeiture of forty shillings for “every stone of wool so carried beyond sea.”\*

The manufacture of worsteds had at this period, it is clear, much increased at Yarmouth and Lynn, then two corporate towns in Norfolk, whose inhabitants in consequence sought to have a warden of their own appointing, to search and seal the fabrics there made; and an act of parliament passed in the year 1523 granted them this privilege. In the preamble it is stated, that since the days of Edward IV., the making of worsteds; says, and stammins, had greatly increased in Norwich and Norfolk. This however must not be taken to imply, that now the worsted manufacture was in a flourishing state, but merely that it had improved since the early part of the reign of Edward IV., inasmuch as during the wars of the Roses it had fallen into very great decay.

An act passed in the fourteenth and fifteenth years of Henry VIII., chap. 3, touching the draping of worsteds, says, and stamyns for Yarmouth and Lynn,—

Recites, that the making and draping of worsteds, says, and stamyns, is one of

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\* 6 Henry VIII., c. 12.

the most profitable occupations in the realm, and that truly and substantially made and wrought have been right acceptable merchandize in foreign countries. That since the passing of the statute of the seventh year of Edward IV., chap. 12, the making of worsteds, says, and stammins, had greatly increased in the city of Norwich and county of Norfolk, and that the same was now practiced more busily and diligently than in times past at Yarmouth and Lynn, and therefore in regard that they were towns incorporate, and that it was painful and costly for them to convey their said cloths to Norwich to be searched and sealed by the wardens; it allowed them at their request, at each place a warden of their own choosing, to search, seal, &c., worsteds. None but Englishmen in these places to weave worsteds, and not more than two apprentices to be taken at a time. These places to be subject nevertheless to the jurisdiction of Norwich in that case, and with this express restriction, that none should shear, dye, or calender, but in Norwich; and that no person should convey or transport beyond the sea any manner of clothes [worsted] before the same were shorn, dyed, coloured, or calendered. When the number of householders of the craft of worsted weavers in Lynn should be less than ten, a warden of Norwich to search and seal worsteds there monthly.

This act to continue for one year.

Made perpetual by 26th Henry VIII., c. 16.

It is conceived, as before stated, that stammins were a coarse stout kind of stuff, and appear to have been the same as the 'stamel' or 'stammel', so often met with in our old authors, then much used for petticoats, for which purpose it was generally dyed red. Out of many quotations which might be given as instances, the following is selected:—

“When I translated my stammel petticoat into the masculine gender to make your worship a pair of scarlet breeches.”—*Randolph's Key for Honesty*, f. 26.

Stammins seem also to have been worn as a coarse upper garment or covering. “A kirtel and a cote for somer with a “blak habite above hem, and over either tyme ij stamyns.”—*M.S. in Bodl. Library*.

The History of John Whitcomb, a noted wealthy manufacturer of the time of Henry VIII., gives a description of the wedding dress of his wife, consisting of a gown of sheep's russet, and a kirtle of fine worsted. In the same book allusion is made to two hundred maidens employed by him in spinning wool, who worked together in a chamber, or as we may term it, a factory, and are thus noticed:—

And in a chamber close beside  
Two hundred maidens did abide  
In petticoats of stammel red  
And milk white kerchers on their heads.

In the 'mind's eye' we picture these factory girls of ancient date in a red worsted petticoat, and kirtle, or jacket, (they wore no gown), with a white kerchief thrown over their heads; thus resembling the factory girls of these latter days, who wear the same kind of head attire, except that it is generally of a red colour.

To satisfy the urgent demand abroad for Norfolk wool, and avoid the penalties against its exportation, as before mentioned, a practice prevailed of exporting the wool after it had been wrought into worsted yarn; to prevent this, an act was passed in the thirty-third year of Henry VIII.,\* which discloses the following particulars.—

1st. The making of worsted goods was the "private commodity," as it is termed, or peculiar manufacture of Norwich and many towns in the county of Norfolk, shewing that the manufacture still remained principally in its old locality, and that the export of the wool in question, chiefly, if not altogether, affected the inhabitants thereof.

2nd. Worsted yarn could only be spun from the wool "of the sheep bred in the county of Norfolk, and in no place *elsewhere*." Even if this limitation cannot be accepted in its literal fulness of meaning, it is certain that by far the greater portion of the wool adapted for the making of worsted was at this time produced there.

3rd. The shipping of worsted yarn now occurred in such great quantities to France and Flanders, and other places beyond the sea, for the purpose of being woven into says, russels, worsteds, and other cloths, that by reason thereof the city of Norwich and other towns in Norfolk were "not only most like to be brought to utter ruin and decay, but the inhabitants to be destitute of any way to get an honest

\* 33 Henry VIII., c. 16.



“living.” It is apparent that this yarn had risen to such estimation abroad, as to be with great pains bought up at a high price by numerous dealers for exportation.

Underneath is presented the substance of this statute.—

In the thirty-third year of Henry VIII., an act was made concerning the worsted yarn in Norfolk, which—

Recites, that among other cities, shires, and towns, having “private commodities,” the city of Norwich with divers others, and many towns in the county of Norfolk, hath been always heretofore kept, preserved, and maintained; the poor men and other dwellers and inhabitants, godly, honestly, and virtuously brought up, occupied and exercised in the same, by a commodity growing and rising only within the said county, that is to say by the making and weaving of worsteds and other cloths, which hath been made and woven of the yarn called *worsted yarn*, spun of the wool growing and coming of the sheep “*bred only within the county of Norfolk, and in no place elsewhere.*”

And forasmuch as the said commodity of making and weaving of worsteds within the said city of Norwich and county of Norfolk, by the deceit and crafty practice of the great multitude of regraters and buyers of the said yarn called worsted yarn, is wholly decayed and taken away from the said dwellers and inhabitants in the said city and shire, that is to say, in that the regrators do buy the said yarn by small parcels of many men, and when by like parcels they have got a great quantity, they do not cause it to be woven or otherwise wrought in the said city or county, but do sell, send, or carry it away out of the realm into France, Flanders, and other like places beyond the sea, with which yarn, strangers not born under the king’s dominion, do make and weave says, russels, worsteds, divers and sundry, and other cloths and things, and bring and sell them to the English to their great advantage, and the clear decay and destruction of the said commodity, by reason whereof the city of Norwich and other towns in Norfolk, are not only most like to be brought to utter ruin and decay, but the inhabitants to be destitute of any way to get an honest living, by and for which reason—

It was enacted, that nobody should buy in Norwich or Norfolk worsted yarn spun there, but only such weavers or artificers as shall work or weave it, or cause it to be wrought or woven within the city of Norwich, or some other market town, or elsewhere, in Norfolk, on forty shillings forfeiture for every pound of yarn so bought and wrought as aforesaid; one half to the king and the other to the informer; and none shall be carried out of the kingdom unwrought under the same penalty.

This act was to continue at first till the last day of the then next parliament only, and afterwards by 37 Henry VIII., c. 23, to end of next parliament.

(But by 18 Edward VI., c. 6, it was made perpetual.)

Three descriptions of worsted articles, says, russels, and worsteds, (besides other cloths), are in this record specifically mentioned, as being woven by the foreigner from Norfolk wool, and afterwards imported into the kingdom, to the “clear decay” of the home manufacture thereof.

It may be conjectured that russel is a corruption of russet, a coarse fabric, signifying that they were of a russet or dingy brown colour. The word 'russel' does not appear to occur in any ancient author prior to the present date.

At this period, and previous, the making of bed coverlets, a species of stout coarse worsted fabric, formed a considerable article of trade in the city of York, and the citizens in accordance with the centralizing spirit of the age, endeavoured to monopolize the exclusive manufacture of these coverlets, and for the purpose obtained an act of parliament, the preamble of which sets out "that the city of York being one of the  
"ancientest and greatest cities within the realm of England,  
"and before this time hath been maintained and upholden by  
"divers and sundry handicrafts there used, and most principally by making and weaving of coverlets and coverings for  
"beds, and thereby a great number of the inhabitants and  
"people of the said city and suburbs thereof, and other places  
"within the county of York, have been daily set on work in  
"spinning, dyeing, carding, and weaving of the said coverlets." The act gives the exclusive privilege of making and vending of these coverlets to the city of York.

Towards the end of the reign of Henry VIII., the scarcity of wool and its price had, from the causes before alluded to, and the forestalling of the home and foreign dealers, much increased from that of previous times, causing great discontent among the woollen and worsted weavers throughout the kingdom. To rectify this abuse of forestalling, the statute passed in the time of Henry VII., before mentioned, was re-enacted, namely, that "during ten years next ensuing  
"no person should buy any wool before the fifteenth of August  
"next after the shearing of the same, but such as would make  
"cloth or yarn thereof, upon pain of forfeiting double the  
"value; and no stranger should buy any wool before Candle-  
"mas day next after the shearing thereof."

Great complaints also arose against the practice which now prevailed to a great extent, of engrossing in one hand many farms, and, because of the scarcity of wool, converting them into sheep walks, which occasioned a great decay of husbandry,

and threatened to depopulate the country. Parliament in the twenty-fifth year of Henry VIII., passed a law, enacting that no person should hold above two farms, or keep above 2,400 sheep, unless it should be land of his own inheritance, or spiritual persons; and which contains many curious recitals respecting the depopulation caused by this practice, the increase of rents, and the price of provisions and wool. Among other matters it is recited, that on account of the great profit which came from sheep, some persons kept 24,000, some 20,000, and others 10,000 to 5,000, whereby a good sheep which used to be sold at 2s. 4d., or at the most 3s., had risen to 6s. or 5s. or 4s. at the least; and a stone of wool formerly in some shires, accustomed to be sold for 18d. or 20d., had risen to 4s. or 3s. 4d. at least: in others, where it had been sold for 2s. 4d. or 2s. 8d. or 3s. at the most, it was then sold for 5s. or 4s. 8d. at the least.\*

By spinning the long wool of Norfolk into worsted yarn, vast numbers of the poorer class of people in that county, had, from the earliest times, obtained a livelihood, and purchased for the purpose wool in small quantities, according to their means, and as they required it. A statute however passed in the thirty-seventh year of Henry VIII., (chap 15) prohibiting any persons from purchasing wool, except merchants of the staple and manufacturers, and the growers refusing to retail it in small parcels, rendered it difficult for these poor spinners to purchase wool as heretofore, and threw great numbers of them out of employment.†

\* In the year 1338 we find (see page 65) that the price of the finest wool was even in the money of those days about five shillings a stone, over and above forty shillings a sack duty, on exportation. The lowest wools, viz :—those of Craven and Durham were sold for two shillings and sixpence a stone, exclusive of duty, so that in fact there seems to have been no advance in the price of wool, but the contrary, seeing that in the time of Edward III, the shilling contained 264 grains, but in that of Henry VIII., only 118; nor does it appear that, in the interim, wool was lower than now. Unquestionably the price of wool and workmanship had decreased since the time of Edward the 4th, as is shewn by the considerable decrease in the price of Cloths and Stuffs.

† The purport of this act was to do away with the small dealers who retailed the wool to the poor spinners. The Merchants of the staple exported all the wool



Loud complaints were made against this law by the spinners of Norfolk, and so far as they were affected thereby, the first parliament of Edward VI., being mindful of the prosperity of the manufactures of the kingdom, repealed its provisions, by passing an act “for the continuance of worsted yarn in Norfolk,” of which the substance is extracted below :—

The statute 1 Edward VI., chap. 6.—An act for the continuance of the making of worsted yarns in Norfolk,

Recites, that the greatest and almost the whole number of the poor inhabitants of the county of Norfolk and the city of Norwich be, and have been heretofore for a great time maintained and gotten their living, by spinning of the wool growing in the said county of Norfolk, upon the rock\* into yarn, and by all the said time have used to have their access to common markets within the said county and city, to buy their wools, there to be spun as is aforesaid, of certain persons called retailers of the said wool by eight penny-worth and twelve penny-worth at one time, or thereabouts, and selling the same again in yarn, and have not used to buy *ne* can buy the said wools of the breeders of the said wools by such small parcels, as well as for that the said breeders of the said wools will not sell their said wools by such small parcels, as also for that the most part of the said poor persons dwell far off from the said breeders of the said wools.

Also recites, that all persons whatsoever, except merchants of the staple, being restrained under a great penalty from retailing of wool, by the statute of 37 Henry VIII., chap. 15, the retailers aforesaid ceased so doing, by reason of which the greater part of the poor, both of Norfolk and Norwich heretofore maintained by spinning, are now forced to beg for lack of work, to the utter ruin and decay of the said city and county, unless remedy be speedily had.

In order for which this act enabled every person in Norwich or Norfolk to buy and sell in open market any wool of Norfolk growth, notwithstanding the aforesaid act.

And reciting the act of 33 Henry VIII., chap. 16, whereby none but weavers of russels, stamyns, says, and such other like cloth, could buy worsted yarn, made it perpetual; and added a clause authorizing all hatters dwelling in Norwich, to buy such worsted yarns, as is called and known by the name of middle uffe yarn as heretofore they used to do, on condition it be employed in hat making within the city only.

All which was again confirmed by the statute of 5 Edward VI., chap. 7, in which the wool growers are obliged to sell their wool in a year's time after the shearing.

Worsted yarn, we thus gather from the above extract, was at this period obtained by the rude and primitive method of

purchased by them, and the growers not liking the trouble of selling their wool in small parcels to these spinners had no alternative but to sell it to the Merchants.

\* “Rock (Danish) a distaff held in the hand, from which the wool was spun by “twirling a ball below.” Dr. Johnson.

spinning on the rock, that is, the simple distaff of the ancients; and that the making of yarn was a domestic occupation scattered among the rural population of the county, forming the house labour of the mothers and daughters of that district.

Taking advantage of the Reformation in England, many foreign protestants fled from abroad to seek an asylum here, and large numbers of these weavers, principally from the Netherlands, (where the Inquisition had been lately introduced) settled in Norwich and other of the great manufacturing towns, where they hoped to live and exercise their religion without molestation. But in this they were mistaken, for the English were ever exceedingly jealous of foreigners settling among them and carrying on their respective trades and businesses, as witness the numerous riots arising from age to age in various parts of the kingdom from this cause;\* added to this, the population were strongly embued with the leaven of the old religion, and were in every respect greatly prejudiced against these new comers, and in no other place had this feeling a stronger or more rancorous root than in Norwich, so that little benefit accrued to manufactures through this immigration.

From the earliest ages its immense population, composed of spinners, weavers, shearmen, dyers, and other artizans, engaged in the worsted trade had been exceedingly turbulent and caused occasionally great uneasiness to the government.† In a city containing, as before mentioned, sixty parish and seven conventual churches within its walls, and comprising a very large number of parish priests, monks, and friars, it may readily be supposed, that the Reformation and the measures

\* It is narrated that in the year 1517, there was a great riot in London against foreign tradesmen resident there.

† The relative size of Norwich in the time of Edward VI, to that of English Cities, may probably be ascertained from the contents of an Act of Parliament whereby it is declared that no city or town should have more than two Taverns, except London, which was allowed forty, York eight, Bristol six, Norwich four, besides other places specified, none of which was to be permitted to have more than four. We may therefore judge Norwich to have been next to London, York and Bristol, one of the largest and most populous cities in the kingdom.

consequent thereon, would be extremely distasteful, and cause great dissatisfaction.

The popular discontent arising also from the extensive inclosure of commons and waste lands, excessive rents, high price of provisions and wool, and the want of employment by the poor spinners of Norfolk, was zealously fanned by the hundreds of ejected monks, and attributed these effects to the destruction of their monasteries and the Reformation. In consequence of the above particularized causes, a most furious rebellion broke out, during the year 1549, in Norwich and Norfolk, headed by Ket, a tanner, who drew many thousand people from the adjoining counties, especially Suffolk, and sacked Norwich, driving out the peaceable and wealthy inhabitants, murdering many foreigners and others, and rendering the city almost desolate. Among other of the demands of the rebels made to government, were these:—that rents and the rate of wool should be reduced to their ancient standard. The insurrection was suppressed after five thousand of the rebels were slain, and Ket their leader hanged; but the trade being greatly damaged, Norwich became the resort of the idle and the dissolute, and did not regain its former condition for sometime.

For many years the Hanseatic or Steelyard merchants had engrossed a large portion of the foreign trade in wool, and woollen and worsted goods, and by various unjust artifices had lowered the prices of these articles, and impoverished the English woollen and worsted weavers. As these merchants paid, in respect of certain privileges claimed by them, only a very small duty, they, it was alleged, defrauded the customs by covering the export of merchandise not belonging to them. In the year 1551 they exported no less a number than 44,000 cloths of all sorts, including worsteds, while all the other foreign merchants, (distinct from the Merchant Adventurers) in the same year only exported the small number of 1,100 cloths, so that the king's privy council finding how detrimental the monopoly of the Steelyard merchants had become, both to the Exchequer and the manufacturers of the kingdom, and that the body held their assumed privileges by



no proper charter, reversed them as contrary to the laws and policy of the realm, and imposed a high duty, twenty per cent upon all merchandise exported by these merchants, in lieu of the very small custom of one per cent. paid by them since the reign of Henry III.

The chartered merchant adventurers during this reign also exported a large quantity of woollen cloth, (principally broad cloth), the manufacture of which appears to have been rapidly on the increase, during the short reign of Edward VI.; but the worsted trade seems on the whole to have been in a drooping state, and partly in its stead the making of felt, and thrummed hats, dornecks, and coverlets, had sprung up in Norwich.

Although on the accession of Mary a large number of English protestants engaged in the woollen and worsted branches of industry were compelled, along with the refugees who had flocked hither during the last reign, to leave the country for conscience sake, and emigrate to Antwerp and other parts of the continent,\* thus reducing the number of artizans connected with weaving, yet it is undeniable that these trades prospered to a considerable extent during the latter part of her reign, so that the home consumption equalled the supply of wool, and the export of it almost ceased.†

It appears that among the productions of foreign looms, some termed satins, made from Norfolk wool, were much worn in this country and abroad, instead of the old Norwich stuffs which had fallen into disrepute. To revive the decaying trade of Norwich several of its enterprising citizens brought over (with their improved looms) a number of weavers of these satins, and also of some other fine worsted fabrics termed russels and satin reverses, and taught the

\* Huet observes in his *Memoirs of Dutch Commerce* (quoted in Macpherson, Vol. 2, p. 120) that the religious persecutions of Charles V, in Germany, Francis II, in France, and Mary in England, drove vast numbers of the people to settle in Antwerp, which at this time was at the height of its prosperity.

† This no doubt in part arose from the decreased supply of Wool owing to the causes before mentioned.

citizens in general their mystery. The introducers of these improvements sought the assistance of the legislature in forming a corporation or fellowship, to supervise the proper making of these new stuffs, and obtained the following Act of Parliament:—

In 1554 a statute was effected concerning russels, satins, and satin reverses, Recites that for late years past these used to be made beyond the seas, of Norfolk wool, and then imported, whereby the mysteries of worsted making and weaving, and the merchants and inhabitants of Norwich, which formerly were well maintained by the weaving and making of worsteds, were reduced very much, such worsteds being now brought out of estimation and very little worth either in this realm or foreign countries, the said satins being universally worn in lieu thereof.

To remedy which Tho. Marsham, Mayor of Norwich, John Corbet, Esq., Ansten Steward, Robert Leech, Rob. Rugg, John Ball, and Alec Mather, Alderman Thomas Whale, Tho. Peck, Ralph Marsham, Rob. Henrie, John Sutton, Rich. Thompson, citizens and merchants, have at their great costs, in bringing in strangers from parts beyond the sea, and in making looms for them to work with them, by which they have made in the said city, of Norfolk wool, better than are made beyond the sea, and have learned the artizans to make the same, by which the citizens are likely to be relieved and advanced to their good and former estate, if some good laws were made for the continuance of the making of the said satins, and such russels, satins, and satin reverses, and fustians of Naples, to be hereafter called Norwich satins and Norwich fustians; in consideration of which an act was passed constituting the mayor and forementioned citizens jointly with John Cook, James Lin, John Cross, Simon Petit, John Marshall, Rob. Leeke, Edm. Barker, and Edm. Selers, eight of the most discreet and worthy men of the mystery of worsted weaving within the said city a fellowship of themselves, with power every third day of February to elect four wardens out of their fellows, to continue wardens for one year, who are to be sworn the Monday following their election before the mayor diligently to view, search, and see all the russels, satins, satin reverses, and fustians of Naples, made that year within the city, and all such as shall be by them deemed to be lawfully, truly, and workmanly wrought, they shall seal with a seal of lead bearing the arms of the city of Norwich, whereby it may be known to the merchants and buyers of them, that the same are allowed to be truly made.

Such as were found to be defective to be cut in two.

Again the reader must be guarded against the exaggerated statements in the preambles of these enactments; for instance, “satins being universally worn” at home and abroad, instead of Norwich worsteds, must be taken to mean, that the former had to a considerable extent superseded the use of the latter. Another and most important fact is elicited from this record, overthrowing the statement of Camden,\* that the Dutch

\* In his Life of Queen Elizabeth.

flying from the persecution of the Duke of Alva, in the time of Queen Elizabeth, *first* introduced the manufacture of *light* stuffs at Norwich, for here we find that many fabrics undoubtedly fine worsted stuffs were made there, at least so early as the year 1554, and it may probably be assumed as the truth, that light and fine stuffs approaching to the delicacy and finish of modern worsted textures were, in this reign, if not before, introduced.

What these peculiar fabrics, now for the first time made in Norwich were, it is not so easy to determine. The satins were perhaps, judging from their name a glossy article, somewhat resembling bombazine, whose manufacture it seems to be settled, the Dutch imported hither in the time of Queen Elizabeth. Naples was unquestionably noted at this period (1554) for the luxury of the dress of its inhabitants, and the making of fine worsteds, hence it may be inferred that these fustians of Naples, afterwards designated Norwich fustians, were of fine texture.

A great loss was occasioned to our commerce by the French retaking Calais, in the year 1558, which, from the time of its conquest by the English in the year 1347, had been a most important port for warehousing; and during a large portion of the period, the staple of wool, woollen, and worsted, whence they were conveniently dispersed to France, the Netherlands, and other parts of the continent. On Calais being retaken, the staple for these merchandise was removed to Bruges.



## CHAPTER VI.

On the Accession of Elizabeth, a grand revival takes place in the prosperity of the Clothing Arts.—Disturbances in the Low Countries and France, and great Emigration of Flemish and Walloon Worsted Weavers to Norwich.—Introduce many new Fabrics, such as mixed Stuffs of Worsted and Silk, Bombazines, and Damasks.—Worsted Manufacture flourishes much soon after the arrival of these Foreigners.—The Queen visits Norwich.—Her magnificent reception.—Greeted on entering the City with a Pageant, representing the Worsted Manufacture in all its Branches.—Complaint of the City of London against the Norwich Merchants, for selling these new Draperies clandestinely.—Their Manufacture very extensive within twenty years after being brought hither.—Their Alnage a lucrative office.—Great trade with the Netherlands in Cloths and Stuffs.—Fall of the City of Antwerp, a vast depot for them.—Trade in them to other Countries.—First Statute against the embezzlement of Worsted.—State of the Manufacture in the time of James I.—Archbishop Laud's persecution drives out many of the Norwich Worsted Weavers.—Notices of the Manufacture during the Commonwealth.—Statute passed in the time of Charles II., for regulating the Worsted Trade.—History of it up to 1700.

THERE are three grand epochs in the early history of the worsted manufacture in England :—the introduction of foreign weavers, and the patronage accorded by Edward III ; the like by Henry VII.; and the immigration to this country, in the reign of Elizabeth, of the Protestant refugees from the Low Countries and France.

With the fifteenth century, the middle ages are usually considered to terminate, but the interval up to the reign of Elizabeth, was one of mere transition. On her accession to the throne, a new era commenced ; new institutions, manufactures, modes of business, and habits of life, arose ; and the aspect of society, which, in all its main features had till now remained much the same as it did on the death of Henry VII.,

assumed, especially in trade affairs, a modern cast, and from this period we obtain a fresh starting point in the progress of the worsted manufacture.

Throughout the whole of the long and prosperous reign of Elizabeth, the clothing arts so essential to the national prosperity, were, without intermission, objects of her solicitude and deep attention, as well as of the sagacious men whom she called to her councils ; and so judicious and beneficial was the countenance vouchsafed, that these arts extended and flourished in all their branches throughout the kingdom.

Events, in 1567, occurred abroad, which gave a mighty impulse to the worsted manufacture in England, and changed, in many respects, its ancient character. Among the populous cities of the Netherlands the principles of the Reformation had taken deep root, and spread widely. The Emperor Charles V., with all his subtlety and ability, had in vain laboured to eradicate them ; but his bigoted successor resolved at once, even at the risk of destroying the immense trade, commerce, and prosperity of that unfortunate country, to uproot there the new religion. To general history belongs the province of narrating the cruel but successful means which he adopted to accomplish his design. Suffice it, that thousands of the Flemish and other weavers and artizans of the Netherlands fled for refuge to foreign lands, where they could, without molestation, enjoy their religious freedom, and maintain themselves and their families by honest industry. About the same time persecutions were also raised against the French Protestants, many of whom were very skilful as weavers of the finer kinds of worsted.

A great multitude of these Flemish and French refugees especially sought shelter in England, as a sanctuary, where according to Camden, the queen, as the Protectress of the Reformed faith, and being also exceedingly desirous to extend the weaving handicrafts in her dominions, entertained these foreigners “ with all kinds of courtesy, and by her permission “ they seated themselves in Norwich, Colchester, &c., to the “ great benefit and commodity of the English, for they were “ the first that brought into England the art of making those

“slight stuffs, which they call bayes and sayes and such other  
“like stuffs.”\*

This narrative, in the latter portion, though affirmed also by other writers of note,† is evidently incorrect,‡ as will hereafter be explained; but although these refugees were not the first introducers here of the art of fabricating these stuffs, they being very skilful weavers, brought with them many improved processes for manufacturing worsted, particularly it would seem those mixed with silk or linen yarn.§

Norwich, for many years did not recover from the effects of Ket’s rebellion, and even at the commencement of the reign of Elizabeth the worsted trade was in a languid unprosperous state, and the city in a decayed and impoverished condition, much of the population having removed from it. To remedy these evils, the municipal authorities, after many consultations, resolved that a deputation should wait upon the Duke of Norfolk then staying at his palace in Norwich, and induce him to obtain a license from the queen (needful according to the usages of the age) for a number of these foreign worsted weavers, who had thus sought refuge in

\* Camden’s *Life of Queen Elizabeth*, (London 1635) page 101.

† Meteranus observes, after Alva had hanged, beheaded, and burnt so many, yet so many more had fled to find shelter and bread for their families in foreign parts, carrying thither arts and manufactures before only known in the Netherlands, that in England the decayed cities and towns of Canterbury, Norwich, Sandwich, Colchester, Maidstone, Southampton, and many others, were filled with manufacturers of woollen, linen, and silk; weavers, dyers, cloth dressers, silk throwsters, &c. It was now that the fugitive Netherlanders taught the English to make bayes, sayes, and other slight stuffs, as also linen, and made their country very populous. (Meterani *Hist. Belg.* L iii, quoted in Macpherson, vol. 2, p. 145.)

“Hereby (say also our own authors) the city of Norwich, which Ket’s rebellion “in the year 1549, had almost desolated, learned the manufacture of those fine and “light stuffs, which have ever since gone by its name, and have rendered that city “not only opulent but famous all over Europe. The bay makers settled chiefly at “Colchester and its neighbourhood, in Essex, ever since famous for that useful and “profitable manufacture, so much in request in the warmer climates of Europe “and America. The bayes, sayes, and other slight woollen goods, are what are “usually called the new drapery, as being so much later introduced into England “than the old drapery of broad cloth, kersies, &c.”—Macpherson, vol. 2, p. 145.

‡ See page 102, shewing that the manufacture of slight worsted stuffs had been introduced in Norwich in the previous reign.

§ Blomefield, vol. 3, p. 283.



England, to settle in Norwich. Letters patent were readily granted for locating there thirty master workmen, each of them to have ten servants,—in all three hundred and thirty persons.\*

Considerable mistakes and controversy have arisen among authors as to the purport of these Letters Patent. As they have been misquoted, and have an important bearing upon the subject of this work, and relate to an event inferior to none connected with the worsted manufacture, (except probably the importation of foreign weavers in the reign of Edward III.) a copy in full is given underneath.†

Elizabeth, by the grace of God, Queen of England, France, and Ireland, Defender of the faith, &c., to all and singular our justices, officers, ministers, and subjects whatsoever, greeting. Know ye, that for divers considerations us specially moving, as well for the help, repair, and amendment of our city of Norwich, by planting in the same, men of knowledge in sundry handicrafts, as also for the relief and convenient placing of certain Dutchmen of the low countries of Flanders, being very skilful therein, We of our especial grace, certain knowledge and mere motion, have licensed, given and granted, and by these presents, for us, our heirs, and successors, do licence, give, and grant, full power, liberty, and authority, to our wellbeloved, the mayor, citizens, and commonalty of our city of Norwich aforesaid, and to their successors, and unto John Powell, William Steane, Henry Clerk, Peter Vanbrugen, and Bartholomew Johnson, and to such other, amounting in the whole to the number of thirty Dutchmen of the low countries of Flanders, aliens born, not denizens, being all householders or master workmen, as by the mayor and commonalty of our said city of Norwich for the time being, under their common seal, or shall be licensed and admitted to be inhabiting within our city of Norwich aforesaid. And that as well the said mayor, citizens, and commonalty, and their successors, and every particular person, having or that shall have any house or houses within our said city of Norwich, as also the said John Powell, William Steane, Henry Clerk, Peter Vanbrugen, and Bartholomew Johnson, and the rest, of the said thirty Dutchmen of the low countries of Flanders, aliens, and every of them, and in default of every or any of them, such as in form hereafter specified, shall succeed them, shall, and may lawfully have, enjoy and use all and every benefit and commodity, thing and things, which hereafter in these presents are expressed, limited, appointed, or specified, that is to say, first, that the said mayor, citizens, and commonalty, may receive, allow, and permit to be inhabiting within our said city of Norwich, the said John Powell, William Steane, Henry Clerk, Peter Vanbrugen, and Bartholomew Johnson, and the residue of the said thirty

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\* Blomefield, vol. 3, p. 282.

† These Letters Patent are printed from a copy in the Lansdowne MSS., No. 7, article 81, preserved in the British Museum.

Dutchmen of the low countries of Flanders, with their servants and families, being Dutch people or English. And that the said mayor, citizens, and commonalty, and their successors, and every particular person of them, may grant, set, or let to farm for the term of seven years or under, to every or any of the said thirty Dutchmen of the low countries of Flanders, aliens, for to dwell and inhabit in every or any dwelling house, shop, messuage, or tenement, with the appurtenances within the said city of Norwich, in as ample manner, as they may do unto any of our lieges or subjects, naturally born within this our realm of England.

And if any of the said thirty Dutchmen, aliens, before mentioned, shall fortune to die, or otherwise to depart, and to have his or their habitations within the said city of Norwich, that then from time to time, instead of every such so dying or departing, or having his habitation there, they the said mayor, citizens, and commonalty, may lawfully and safely receive, allow, and admit, to inhabit within the said city of Norwich, such other Dutchmen, aliens, and their families (for the time being) under the common seal, as they shall think to be mete, there to inhabit. And also they, and all other person or persons, having any house or houses in the said city, shall or may lawfully, or safely, (as aforesaid) grant or sell, or let to farm, any dwelling houses, shops, messuages, or tenements, within the said city of Norwich, that is to say, one house or messuage, with the appurtenances to every such Dutchman aliens, in form aforesaid, licensed to inhabit for years or at will, as they can agree. And that the said mayor, citizens, and commonalty, and every other of the before rehearsed person or persons, shall and may lawfully do and execute the premises, from time to time, without any contempt, offence, or displeasure of us, our heirs, or successors, and without any forfeiture, pay, or penalty, or any other loss or damage, to be incurred, forfeited, or sustained: the several statutes or acts of parliament, made in the first year of King Richard III., or in the thirty-second year of the reign of our most noble and dear father King Henry VIII., or any other whatsoever act, statute, law, custom, proclamation, ordinance, prohibition, restraint, or other thing whatsoever to the contrary in anywise notwithstanding.

And further of our special grace, certain knowledge and mere motion, We do grant for us, our heirs and successors, that the said John Powell, William Steane, Henry Clerk, Peter Vanbrugen, and Bartholomew Johnson, and all and every the rest of the said thirty Dutchmen aliens, which in the several households and families (for the time being) shall inhabit within the said city of Norwich, as is aforesaid, with their servants, not exceeding the number ten, in each of their families and households, and in the whole (at any one time) not exceeding the number of thirty households for the whole exercising of the faculties of making of *bayes, arras, saies, tapestry, morkades, stamens, carsey*, and such other outlandish commodities as hath not been made within this our realm of England, may lawfully and safely inhabit within the said city of Norwich, and there exercise the said faculties above mentioned only, and none other. And for those intents and purposes, may safely and lawfully hire and take to farm, dwelling-houses, shops, or tenements, in form aforesaid.

And that upon occasion of death or departure of any of the said thirty Dutchmen aliens, from time to time, dying or departing, as is aforesaid, the other Dutchmen aliens succeeding, as is aforesaid, within the number aforesaid, shall and may do and use the like, to all intents and purposes, as he or they that shall fortune so to die or depart might have done, and that without any such vexation or trouble of any person or persons. And also without any pain, penalty, or other forfeiture, loss or



damage, to be incurred or forfeited, to us, our heirs, or successors for the same, the said several statutes or acts of parliament, as aforesaid, or any other act, statute, provision, usage, custom, prescription, law, or other thing whatsoever, to the contrary notwithstanding.

Nevertheless our pleasure is, that in the whole thirty households, they not exceed at any time, the number of three hundred persons (being aliens) in men, women, and children. And these our letters patent shall be as well to the mayor and citizens and commonalty, and to every of them, as to the said aliens, and to all and every other person or persons, to whom it shall appertain a lawful and sufficient warrant and discharge for the doing and executing of all the premises. And our further pleasure is, that no information be received in any of our courts to impeach or molest any person or persons, for doing and using the benefit and liberty of this our guarantee, upon pain of our displeasure. Provided always that these our letters patent shall continue, until our other letters patent under our great seal of England to the said mayor and commonalty hereafter to be directed [shall have been set forth when] the same shall be revoked and repealed.

In witness whereof we have caused these our letters to be made patent. Witness ourself at Westminster, the fifth day of November, in the seventh year of our reign.

At once the salient points of this document will be observed. Two reasons are given for granting these Letters. First, "the help, repair, and amendment of the city of Norwich by "planting in the same, men of knowledge in sundry handicrafts." And secondly, "for the relief and convenient "placing of certain Dutchmen of the Low Countries of "Flanders, being skilful therein."

The articles directed to be made by them are "bays, arras, "says, tapestry, mockadoes, stamens, kersey, and such other "outlandish commodities as had not been used to be made "within the realm of England"—and none other. It is obvious, from the preceding pages, that the allegation that 'says' and 'stamens' were "outlandish commodities," and had not been accustomed to be made in England, is quite incorrect; and this seems also to be the case as regards bays.

Worsted fabrics termed 'says' were of old, manufactured in England. They are even mentioned with stamens, as articles made at Norwich in the twelfth year of Henry VII., and in the fourteenth year of Henry VIII., as part of the manufactures of Yarmouth.\*

Stamens were like says undoubtedly produced and long before now well-known in England; at least in the days of

\* See pages 86 and 92.



Henry VII., for they are then enumerated among the articles made at Norwich.\*

Added to this, it would appear, from the wording of the act of parliament, "touching worsted weavers of Yarmouth and Lynn," made in the fourteenth year of Henry VIII., that these manufactures had been produced so early as the time of Edward IV., for it is therein recited, "that since the seventh Edward IV., the making of worsteds, saies, and stammings, had greatly increased in the city of Norwich and county of Norfolk, and was then practised more busily than in times past at Yarmouth and Lynn."†

If we believe the old distich supposed to have been written in 1546, bays (that is baize) of fabric partly worsted and partly woollen, had been introduced here in the time of Henry VIII.

" Hops, reformation, bays, and beer

" Came into England all in one year."

Wheeler also in his History of the Merchant Adventurers, mentions that in 1564, bays were made in England and exported to the Low Countries.

As another instance of the incorrectness of the above mentioned record, kerseys (though woollen and not within the province of this work) may be specified, as they were made in England in the time of Henry VIII., being set out in the provisions of an act of parliament passed in the 34th—35th year of his reign, chap. 26.

Mockado is defined, by Nares, in his Glossary, as 'a stuff made in imitation of velvet.' He quotes several authorities which indicate that it was fine texture, and probably made partly of silk.

It is difficult to determine whether Arras (so named from a town in France) and tapestry were altogether new fabrics in England. Sufficient has however been advanced to establish the fact, that the averments in these Letters Patent are not to be implicitly relied upon, but thus much is certain, that these stranger-weavers brought with them at least many ingenious

\* See pages 86—87.

† See page 92.

methods of making worsted pieces, which if not altogether new, were greatly improved.

As on previous occasions the populace of Norwich strenuously opposed the introduction of these foreigners into their city. On the letters patent being forwarded to the mayor to be put into execution, he convened an assembly in which the commons refused to “suffer the common seal of the city to be put to the admission of any stranger, and upon that the court agreed to fix the common seal of the office of mayoralty to the admission of the thirty masters.”

The following is the form of admission copied from a book kept among the archives of the corporation of Norwich:—\*

Thomas Sotheron, mayor of the city of Norwich, with the advice of his brethren the aldermen, according to the Queen's Majesty's Letters Patent, bearing date November fifth, in the seventh year of Her Majesty's reign, do license John Powell, a stranger (alien) to take to farm any house, messuage, or rent within the city aforesaid, there to inhabit and dwell with his household and family, to use exercise, make, and work, as well all such commodities as in the said letters patent are contained, as others not heretofore made or wrought within the said city, during the time of his good behaviour and obedience to such constitutions and orders as be now made and hereafter shall be made, for the better governance of the said city. In witness whereof the said mayor to these presents has caused his seal of office to be put the first day of June, in the eight year of Queen Elizabeth.”

Consequent upon the introduction of these strangers and their revived or improved manufactures the trade of Norwich again began to flourish; the ruinous houses were rebuilt; a plentiful demand for provisions arose; and the city and surrounding country were speedily in a thriving condition.

Blomefield records that the manufacture in Norwich “revived again in Queen Elizabeth's time by means of the Dutch who came over then, and not only threw the trade into a different channel but improved the goods to a much higher perfection by weaving greater variety of them than heretofore, so that the bloody Inquisition of the Duke of Alva which forced these Dutchmen to flee hither for conscience sake, was the means which raised the trade of this place to that

\* Blomefield, vol. 3, p. 282.

“degree as to vend above the value of £100,000 a year in  
“Norwich stuffs.”\*

Another author relates, but does not give his authority for the statement, that “the strangers introduced the fine branches  
“of manufactures, such as the striping and flowering of stuffs  
“and damasks, and so great was the demand for these articles  
“that the city is described as a deserted place, all being  
“engaged at their looms except on Sundays when the streets  
“swarmed with artizans.”†

Fabrics of worsted and silk mixed, were made at Norwich, in the year 1570, for in what is called the Book of Drapery, belonging to the Hall at that time, “bays, fustians of  
“Naples, *caungeantries*, tufted mockadoes, *currelles*, and all  
“other works mixed with silk, saietrie, or linen yarn, are  
“mentioned.”‡

It is without dispute that the Dutch brought with them the art of making bombazines.§ So early as the year 1575, the Dutch elders presented in court these articles as a new manufacture and requested to have the searching and sealing of them to the exclusion of their rivals the Walloons, who insisted “that all white works belonged to them,” but the Dutch, as the first inventors had their request granted.|| This contest throws some light on the distinction between the fabrics introduced and made by the two classes of strangers. The manufacture of bombazines continued from this time until a recent period a very extensive one in Norwich. They are now superseded by the paramatta.

After a time many more of these foreign weavers emigrated

\* Blomefield, vol. 3, p. 83.

† Blakely’s History of the Manufactures of Norwich, which is a very brief but interesting work, comprised in 27 pages.

‡ Blomefield, vol. 3, page 283.

§ Bombazine is derived from *Bombyx*, i. e. silk worm, hence Bombycina, the name of a silk fabric among the Romans.

|| “In 1575 the Dutch Elders presented in Court a new work called Bombazines, praying to have the search and seal of them to their use, exclusive of the Walloons, who insisted that all white works belonged to them, but the Dutch, as the first inventors, had their petition granted.”—History of Norwich, 1768, vol. 1, pp. 225—6.



hither, and established themselves in Norwich. Four years after the first settlement of these foreigners, they had increased in Norwich to 1,132 persons; but in October, 1571, there were

Men of the Dutch nation .....	868
Men of Walloon nation .....	203
Women of both .....	1173
Children under fourteen years .....	1681
	<hr/>
	3925

of this number 666 were English born, and 355 had come over since the previous twenty-fifth of March.

In 1582, on a second return made of the strangers settled in Norwich, there were found to be 1,128 men, 1,358 women, 815 children, strangers born, and 1,378 children, English born, in all 4,679.\*

The Dutch had the quire of the preaching Friars' Church assigned to them for their religious assemblies; and the Walloons or French Congregation, first, by leave, made use of the Bishop's Chapel, but afterwards had the church of St. Mary at Tombland assigned to them, "which, (writes Blomefield in 1742) they still enjoy, though both the congregations are "now very small, and almost quite decayed."

"Here their master wardens, of whom twenty-four were "Dutch, and six Walloons, met to search and seal goods, and "to carry out the rules and ordinances by which the body "was governed."†

Continual dissensions arose between the citizens of Norwich and these strangers, and, on some occasions, broke out in serious riots. It must be confessed that the foreigners demeaned themselves in a very insolent manner, not to be expected from men who had fled from their own country for

\* It will be observed that the Queen's Letters Patent only authorized the settlement of three hundred and thirty foreigners at the most. After some search no account can be given of the authority or license under which such a multitude of these afterwards settled in Norwich. The persecutions in the Low Countries, in 1565, caused many of the inhabitants to emigrate, but, the great tide of emigration was at its full, after 1567.

† Blomefield, vol. 3, p. 283. Also History of Norwich, (1768) vol. 1, p. 226.

their lives, and had obtained an asylum, protection, and a good livelihood in England. So violent was the animosity between them and the natives, that the magistracy of Norwich were compelled to command all the former not to walk the streets after eight o'clock at night.

Many rules and ordinances were made for the better government of these emigrants in Norwich. Two aldermen, one to be a justice of the peace, were assigned to hear and determine differences among them. Officers were chosen to search and examine their goods, and ascertain that they were made of proper materials, and of right lengths and breadths.

They were to pay all parish dues whether of church, priest, clerk, &c.

Also not to occupy, buy, or sell any merchandise or goods whatever, only those of their own making, and such not by retail unless to their own nation.

To pay all customs and duties due for their wrought commodities to the said two aldermen and the chamberlain, in every quarter, viz., for every whole Flemish cloth 2d., every half one 1d., every whole bay 2d., every double say 2d., every double stamel (that is stamen) 2d., and 1d. for the single ones.\*

There is a very pleasing feature connected with the settlement in Norwich of the Dutch, who have from remote times excelled in the cultivation of flowers. The refugees brought to Norwich many specimens before unknown here, such as carnations, gillyflowers, and other beautiful products of the garden, and implanted a taste for horticulture in Norwich which survives to this day, and has conferred upon it the pleasant name of "The City of Gardens."

As a mark of royal favour, and to countenance its manufactures, the queen, in the year 1579, visited Norwich. The magnificent reception she met with, is recorded with great minuteness in two curious tracts, which are reprinted in Nichols' *Progresses of Queen Elizabeth*. The first sight which met her eyes on entering the city, was the artizan-strangers' pageant, illustrative of the principal parts of its manufactures.

\* These rules are taken from Blomefield, vol. 3, page 283.

1st. The weaving of worsted. 2nd. Weaving of russels. 3rd. Weaving of darnick. 4th. Weaving of tuff mockado. 5th. Weaving lace. 6th. Weaving of caffa. 7th. Weaving of fringe. 8th. Children spinning of worsted yarn, and knitting of worsted hose ;\* “a shewe which pleased her majesty so greatly as she particularly viewed the knitting and spinning of the children, perused the loombes, and noted the several works and commodities which were made by these means.”†

This passage plainly implies, that the weaving of russels, introduced into Norwich in the last reign, continued still one of its staple trades in the hands of strangers ; that the making of tuff mockado, one of the new draperies, was another ; also, that worsted spinning was then, as in the West Riding, at the close of the eighteenth, and the beginning of the present century, principally the work of children. If the commonly received opinion be adopted, that the art of knitting stockings was in this reign brought to England, we have here proof how soon it had become one of the staple trades of Norwich.‡

Sufficient has been adduced to indicate satisfactorily that the stranger-weavers did not first introduce into Norwich, in this reign, many of the slight stuffs and fine worsteds there manufactured ; but it may readily be inferred, from numerous distinct notices and allusions contained in the preceding pages, that they greatly improved and increased the production of these, and were especially skilled in the manufacture

\* Holinshed, vol. 3. p. 1290.—*London*, 1808.

† Nichols' Progresses of Queen Elizabeth, vol. 2, p. 13.

‡ Howell, in his History of the World, vol. 2, p. 222, narrates, that in the third year of her reign, Queen Elizabeth was presented by her silk-woman, Mrs. Montague, with a pair of black silk knit-stockings, and that thenceforward she never wore cloth ones. It is also related by several writers, that one William Rider, an apprentice on London bridge, seeing at the house of an Italian merchant a pair of knit worsted stockings, from Mantua, ingeniously made a pair like them, which he presented in the year 1564, to William, Earl of Pembroke, and which were the first of that kind worn in England.—Macpherson, vol. 2, p. 136. It appears, that the invention of knit silk stockings came from Spain.



of bayes,\* an article comprised within the scope of this volume, inasmuch as it is partly composed of worsted. It is distinctly expressed, in a document presently to be set forth, that bayes were the principal kind of fabrics made by the strangers, who, it is also apparent paid heavy duties on the products of their labours. To lessen these burdens, the mayor and aldermen of Norwich, in 1578, addressed a letter to Lord Burghley, the queen's treasurer :—

Right Honourable and our singular good Lord, with our dutiful and humble thanks for your great goodness always towards us. Whereas William Fitzwilliam, and George Delues, Esquires, by virtue of Her Majesty's Letters Patent, have required of the inhabitants of her highness's city of Norwich, a certain portion to be levied of commodities here made, as well by English as strangers, the rates whereof by a Codicil unto the said Letters Patent annexed doth appear.† We have dutifully considered the same, and do find that in part it toucheth the breach of some privilege, heretofore by the Queen her Majesty's Progenitors, granted to the citizens here by charters; and also the Corporation of wolsted and russel makers, to them granted by Act of Parliament. And, as concerning the new inventions made by the strangers, whereof the chiefest are bayes, we do understand and know the painful travail which their officers use, (being the number of eighteen persous,) for the true search, sealing, and measuring of the bayetree; whereby their commodities hold such credit and estimation, that they be vendible both in this realm, and in many countries beyond the seas, to the benefit of her highness's custom, and the relief of the poor strangers the workers thereof, with many of our own nation. The manner and order of their search and sealing we have herewith sent unto your lordship, by the alteration or changing whereof what inconvenience may ensue to the true search now used, we humbly commit to your honourable consideration. And forasmuch as the aforesaid commodities, and the other inventions made of rock-spun yarn, is the exercise of the poorer sort of people, both English and stranger, of the which a number have been relieved by charity, besides their labour, and the burden of these impositions must come from them, (they having made their pitiful supplication unto us) we being therefore humble petitioners unto your good Lordship to be our mean unto the Queen her Majesty, for the relinquishing of these impositions. And we, according to our bounden duties,

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\* It is stated, in a M.S., in the Lansdowne Collection, No. 71, article 51, that the manufacture of bayes was, in the early part of the reign of Queen Elizabeth, brought into England. Wheeler, as before noticed, (page 110,) writes, that they were, in 1564. made in and *exported* from England. From numerous sources however, it is evident, that if introduced here earlier than this reign, they must have been made only in small amounts, and very greatly increased by the influx of the strangers in 1565.

† After some search, this codicil cannot be found, so as to be printed herein.

shall pray to the Almighty for the long and prosperous preservation of your honor to his good pleasure. From Norwich, the 11th day of January, 1578.

Your honor's most humble, ROBERT WOODE, Mayor.\*

Hereon it may be remarked that the stuffs introduced or improved by these strangers, and termed 'new inventions,' are described as being made of rock-spun yarn, produced by the poorer sort of people, both English and strangers. It is certain also that the manufacture of 'wolsted'† and russels still continued to be governed by the corporation, or fellowship, created in 1554;—that eighteen persons were appointed to search the making of bays, a large number, when it is remembered that the whole number appointed a few years before, for searching these 'new draperies' was only twenty-four for the Dutch, and six for the Walloons. Some other circumstances also worthy of attention may be gathered from the perusal of this document, but which are so obvious that they need not be particularized.

What the rates mentioned in this letter to Lord Burghley as being levied upon these 'new draperies,' consisted of, is uncertain, because, after a search, the codicil therein mentioned cannot be discovered. At this time, (1578) an attempt was made to impose a subsidy or custom upon these stuffs, according to the pound weight of wool used in the manufacture thereof. It was contended that, inasmuch as the queen lost a large revenue upon the wool manufactured into these fabrics, it was but reasonable that they should pay a tax to the crown, in proportion to the loss. A manuscript, (apparently similar to the codicil of rates above mentioned,) extant in the British Museum, and drawn up for the purpose of fixing a duty on these draperies, sets out the reason for the imposition of such a burden; and also contains a list of them, and the rates proposed to be thereon levied, which were, it may be assumed, the same as those specified in the missing

\* Lansdowne MSS., No. 27, fo. 65, in the Burleigh Papers, British Museum.

† Stow, in his Survey of London, (p. 76,) has this passage,—“The officers in jacquets of *wolsted* or say, party coloured,” so that it seems the term was used for worsted, or probably for say, a fabric of worsted.

codicil. In addition, information is obtained from this list of the lengths and degrees of fineness (judging from the weight) of these new worsted fabrics.

A sack of wool weigheth 364lbs., and being transported by the merchants of the staple, yieldeth to her Majesty for custom, subsidy, and license money, £3.; and the same sack of wool being converted into cloth, will make four broad short cloths, and every broad short cloth by the statute of King Edward VI., in the fifth and sixth years of his reign having their full contents and proportions limited, being clean scoured, milled, and well thicked, and thorough dry, over and beside all manner of waste, must weigh 64lbs.; and every broad short cloth, being transported by the English merchant, yieldeth to her Majesty, for custom, 6s. 8d.; so that the sack of wool being transported in cloth, as before said, yieldeth to her Majesty 26s. 8d.; the which is less profit to her Majesty than the sack of wool being transported in wools, as aforesaid, by 33s. 4d.

The said sum of £3., for her Majesty's duty on the sack of wool, being divided into 364 parts, amounteth to 2d., on the pound weight, saving four additional pounds; and her Majesty's duties of 6s. 8d., on the cloth, being divided into 64 parts, which is for so many pounds as the said broad short cloth weigheth, amounteth to  $1\frac{1}{4}$ d., on every pound.

Hereafter ensueth the contents of the particulars of the new draperies devised by the strangers, being rated according to the proportion of the broad short cloths, at  $1\frac{1}{4}$ d., on every pound of wool, which is first used to the furniture of every particular:—

Bayes, double sort,	34yds.	receiveth in wools	44lbs.	rated at	$1\frac{1}{4}$ d.	per lb.,	4s. 7d.
Bayes, middle sort,	34yds.	„	24lbs.	„	$1\frac{1}{4}$ d.	„	3s. $6\frac{1}{2}$ d.
Bayes, single sort,	34yds.	„	24lbs.	„	$1\frac{1}{4}$ d.	„	2s. 6d.
Rasse or Stami-	} 22yds.	„	32lbs.	„	$1\frac{1}{4}$ d.	„	3s. 4d.
nett of the flow-							
ers' making ..							
Serge, French sort,	23yds.	„	20lbs.	„	$1\frac{1}{4}$ d.	„	2s. 1d.
Sayes, Flanders sort,	27yds.	„	16lbs.	„	$1\frac{1}{4}$ d.	„	1s. 8d.
Narrow Wosteds	15yds.	„	7lbs.	„	$1\frac{1}{4}$ d.	„	0s. $8\frac{3}{4}$ d.
Norwich Grograines	14yds.	„	5lbs.	„	$1\frac{1}{4}$ d.	„	0s. $6\frac{1}{4}$ d.
Mockadoes, double	} 14yds.	„	4lbs.	„	$1\frac{1}{4}$ d.	„	0s. 5d.
sort, .. .. .							
Mockadoes, single	} 14yds.	„	3lbs.	„	$1\frac{1}{4}$ d.	„	0s. $3\frac{3}{4}$ d.
sort, .. .. .							
Mockadoes, tuft, ..	14yds.	„	6lbs.	„	$1\frac{1}{4}$ d.	„	0s. $7\frac{1}{2}$ d.
Plommetts, .. ..	14yds.	„	4lbs.	„	$1\frac{1}{4}$ d.	„	0s. 5d.
Carrells .. ..	14yds.	„	4lbs.	„	$1\frac{1}{4}$ d.	„	0s. 5d.
Fustians of Naples	14yds.	„	6lbs.	„	$1\frac{1}{4}$ d.	„	0s. $7\frac{1}{2}$ d.
Blankets, called Spanish Rugges, receiving	} 10lbs.	„	$1\frac{1}{4}$ d.	„	1s. 0 $\frac{1}{2}$ d.		
one with another, great and small, every							
piece in wool, .. .. .							
Knit Hose of Wolsted Yarn, according to	} 1lb.	„	$1\frac{1}{4}$ d.	„	0s. $1\frac{1}{4}$ d.		
every piece both great and small, in Wools,							

In consideration of the losses that her Majesty hath by the making of these new sorts of Cloths within the realm, in the custom and duty of the wool, that otherwise would be transported, and in the customs and subsidies that should be paid at the



returning of the same in cloths, it is thought reasonable that there be paid for all such cloths and all other like new sort of cloth and cruel lace and fringe, that shall be made within the realm, of wool, by strangers only, [a blank here] upon every pound weight.

It is necessary, for the better levying of the said [a blank here] upon the pound weight, and for the understanding of the goodness of the said cloths, and what quantity of wools shall be yearly made into such sort of cloths and wares, to the intent it may be considered what loss her Majesty shall thereby have in her Majesty's custom, that all the same be sealed by especial officers, with seals made for the purpose; and that a book be made thereof, and delivered yearly into the exchequer; and the same officers shall take, for the sealing of the same, such fees as be now paid in any city, town, and country of the realm, in the like case.\*

Another indication that the 'new draperies' were now sold in great quantities, is derived from the contents of a complaint, preferred by the city of London, to the queen's council, in 1579, against the Norwich dealers, under these circumstances. For a long period, all cloths and stuffs vended in London had been exposed at Blackwell Hall, as the established mart for such goods. Under pretence that these 'new draperies' were not comprehended within the description of merchandise customarily required to be brought thither, the Norwich merchants sold them in their inns. The corporation of London strenuously endeavoured to put down this practice, and preferred the above mentioned complaint, wherein it is set out, that these new inventions, such as "buffiner, mockado, and the like had grown much into use, "to the decay of the use of cloth." It is evident from the tone of the complainants, that these articles had become most important items of merchandise, and that it was exceedingly desirable the advantages derived from their extensive sale, by causing a concourse of people, should be secured to the corporation.

A Complaint of the City of London against Norwich dealers, for selling new invented Stuffs clandestinely, 1579.

The City of London by Charters confirmed by Parliament, and by usage, have the appointing of their markets and market places, and also authority to make ordinances so that the same be consonant to reason, and profitable for the City and the Queen's people.

Ordinances have long since been made by them, and continually executed, for bringing sundry commodities to certain market places, and not to be sold elsewhere, as Cloth at Blackwelhall, leather at Leadenhall, and such like.

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\* Burghley Papers in the Lansdowne MSS., No. 27, Art. 60, anno 1578.

Of late the use of certain kinds of clothing called new inventions, as Buffiner, Mockadoes, and such like, have grown much in use, to the decay of the use of cloth.

The Norwich men being the greatest merchants of those inventions, do refuse to bring them to the common market, saying they be no cloths, but do utter them in great Inns, in close chambers and corners, to the great peril of foreign buying and selling with strangers, and the deceit of the people, notwithstanding that the Norwich men compel all to come to a certain market in their city, and do take thereof great impositions.

The City of London, by authority of the said Charters, have made an ordinance, that the said new inventions shall be brought to a certain market place, as other cloths be, there to be uttered and no where else in London, and did desire for the sellers standing in the market, and for the laying up and safe custody of their goods, to receive about a half-penny a piece to the use of the poor, which is thought to be as small charge as they be now at in their Inns. The Norwich men found themselves herewith grieved, and do pretend that they shall not pay any such exaction.

The City of London, hath offered them to forbear the payment, and requireth only that the said commodities be brought to an open market, and not sold in corners, and do allow the Norwich men for their sale three market days together in the week, such as they will choose, without paying anything therefore, whereby the secret bargaining with strangers may be avoided, and the truth of their stuff may be seen.\*

Within twenty years after the method of making these new draperies had been brought to Norwich, the production of them had arrived at a great magnitude, and the trade of Norwich flourished exceedingly. A sudden and calamitous check was, in 1583, given to the prosperous condition of the city by the breaking out of the plague, which, in a few months, destroyed the amazing number of 2482 strangers, and 2335 native inhabitants. It lies not within the intention of this work to inquire how it happened that this disproportionate and awful mortality befel, in particular, the strangers, who must necessarily have constituted a very small portion of the total population of the city—whether it arose from their houses or lodgings being more crowded and unhealthy, their diet less wholesome, or their habits of life.

From this shock, the trade of Norwich soon rallied, and in a short period became again, especially in the new draperies, very extensive and flourishing. Owing to their extensive production in that city, the alnage of them afforded a con-

\* Lansdowne MSS., No. 28, article 25.

siderable source of profit; and the office having been leased to inexperienced persons, great mischief to the trade arose, which induced the mayor and aldermen to petition, in 1585, Lord Burghley to grant them a lease of the office. To support their application and obtain the lease upon easy terms; they relate that they “were daily at great charges in maintaining “expert men, both to view and search the true and perfect “making of every sort of commodity here made before they “be sealed, which is the only credit of our city, and maketh our “commodities vendible and so is like to continue if like pains “be taken. Also that we provide for them at our charges such “houses as may serve them for that purpose; so that the chief “end wherefore we desire the same is to have the true good “and perfect making of the said commodities still continued, “which otherwise would soon be overthrown, and so be the “overthrow of many thousands. And also that our own “natives and the strangers among us may live in quiet without molestation of searchers and sealers, such as have no “skill or knowledge.”\* Some estimate of the value of the alnage may be formed when four hundred marks were offered as a fine for a twelve years’ lease, besides the yearly sum of five pounds.

At this period an immense trade between England and the Netherlands was carried on in woollens and worsteds. Camden alluding to it, in his *Life of Queen Elizabeth*,† writes,—“certainly in these our days (I speak it out of books of “account) the commerce betwixt the English and the Netherlands hath amounted to above twelve millions of gold, every “year; and the English cloths [including woollens and worsteds] exported yearly to Antwerp have been estimated at “five millions of gold.” According to the pedantic notions of the age, Camden wrote his work in Latin, and employs the word ‘*aureorum*’ (signifying any gold coin,) whereby much disquisition has arisen respecting its exact meaning. In the

\* Lansdowne MSS., No. 44, article 25.

† Camden’s *Life of Queen Elizabeth*, (edit. 1635, page 57.) The words of the original Latin, are “*5 millionibus aureorum sunt estimati.*”



English edition of the work, published during 1635, the word is rendered pounds sterling. Others have supposed it to mean florins of three shillings value, and in which reckonings were then chiefly made at Antwerp.\* We have, however, in a passage from a contemporary historian, Guicciardini, unimpeachable authority, that ducats or crowns were the coin denoted by this Latin term. These are his translated words, "It is marvellous to think of the vast quantity of drapery imported by the English into the Netherlands, being undoubtedly one year with another above 200,000 pieces of all kinds, which at the moderate rate of twenty-five crowns a piece is five millions of crowns (about one million sterling) so that" he observes, "these and other merchandises brought to us by the English, and carried from us may make the annual amount more than twelve million crowns (two million four hundred thousand sterling) to the great benefit of both Countries, neither of which could without the greatest damage dispense with this vast traffic."† Further corroboration of this important passage, bearing out the statement of Camden, may be found in the Hanseatic historian, Werdenhagen, who relates that 200,000 English cloths were about this time yearly exported.‡ Here we have fully established by incontrovertible testimony the fact of this immense export in the time of Queen Elizabeth of woollen and worsted pieces, amounting to one million of money, an enormous sum in those early days of British commerce; and that Antwerp was the grand mart for these goods, whence they were distributed throughout Europe.

An epitome, extracted from Guicciardini's Description of the Low Countries, of the imports and exports of that city,§ furnishes a tolerably precise view of the state of the foreign

\* Smith, in his *Memoirs of Wool*, vol. 1, page 102, observes, "To suppose the very least then, florins of three shillings each, the annual export of woollen goods at that time, from England to Antwerp only, amounted to £750,000 sterling."

† Guicciardini *Descrittione di tutti i Paesi Bassi*. This is an exceedingly valuable work, written in Italian, in the time of Queen Elizabeth.

‡ Quoted in Macpherson, vol. 2, page 171.

§ The epitome in Macpherson, (vol. 2, p. 128, *et seq.*) has been collated with the original work, and additions and corrections made.

worsted trade, and exhibits the circumstance, that English cloths and stuffs were much prized, and shipped from Antwerp to almost every country of Europe.—

To Rome was sent a variety of woollen drapery, says, ostades, demi-ostades, (*saie, ostate, mezzo-ostate,*) and tapestry.

To Ancona, great quantities of English and Netherland cloths and stuffs.

To Bologna, serges, says of every sort, (*saie d'ogni sorte*) and other stuffs.

To Venice, cloth and wool of England, ostades, and demi-ostades, in great quantities, and import thence camblets, carpets, &c.

To Naples, Netherland and English cloths and stuffs, in abundance.

To Sicily, cloths and serges, in great quantities.

To Milan, great quantities of English and Netherland cloths and serges, English and Spanish wool, and received back fustians, scarlets, tammies, (*stamettas,*) and other fine and curious draperies, and various sorts of high priced mercery.

To Florence, many sorts of woollen stuffs and English wool, and received back fine shalloons, then called rassas.

To Genoa, English and Netherland cloths and serges.

To Germany, English cloths, as a rare and curious thing, and of high price; also, a good deal of Netherland cloths and serges, tapestry, &c., and received in return, fustians of a high price, to the value of 600,000 crowns yearly.

To Denmark, Norway, Sweden, Livonia, and Poland, vast quantities of English and Netherland cloths, stuffs, fustians, camblets, &c.

To France, English and Netherland cloths and serges.

To England, Antwerp sent serges demi-ostades; and from England, Antwerp receives vast quantities of fine and coarse draperies, fringes, and other things of that kind, to a great value; also, the **FINEST WOOL**.

To Scotland, camblets and serges; but little exported thither, as that country was chiefly supplied from England and France.

To Ireland, the same, and received back low priced cloths.

To Spain, much woollen cloth of various kinds, made in the Netherlands, as also some made in England, serges of all prices; ostades and demi-ostades, camblets, and received back *fine* wool.\*

To Barbary, woollen cloth, serges, &c.

It will be noted, that English cloths were deemed rare and curious articles, and of high price, which clearly indicated that they were superior to those made in the Netherlands. The clothing exports from England are included in the general words “vast quantities of fine and coarse draperies,” including no doubt, every description of

\* Guicciardini mentions, that in 1560, the large quantity of 25,000 packs of Spanish wool was imported into the Netherlands, and that in former times it amounted to the enormous quantity of 40,000 packs.

woollen and worsted, then made here. The reader will also particularly note, that the wool from England is characterized as the *finest*, while that from Spain is only termed *fine*, a sufficient proof that English wool, was, even so late as the sixteenth century, the finest and most valuable in the world. The duty on its export was now £3 6s. 8d., and it was in so much demand at home, that only a small quantity reached the Netherlands.

While Antwerp thus stood in the zenith of its prosperity, it is narrated, that upwards of one thousand merchants were there resident. The sack of this noble commercial city, by the Duke of Parma, in 1585, gave the finishing blow to the commerce of the Netherlands, and exalted England, without competition, to the highest position in the manufacturing and commercial world. On the fall of Antwerp, about one-third of its manufacturers and merchants, who wrought and dealt in silks, damasks, taffeties, bays, says, serges, stockings, &c., settled in England, where they swelled the tide of its manufacturing prosperity.

A chief bar to the export of the produce of our sheep, lay in the increase in the production of woollens and worsteds at home, whereby the price of wool, which, early in this reign, stood at about 10s. a tod, advanced to 13s. 4d., and in the year 1581, reached the great price, considering the value of money in those days, of 20s. a tod.\* Eventually before the close of the reign it brought about 30s. Contrary to the assertions of many writers, the exportation of wool *was not prohibited* in this reign; but, from the vast home consumption, and consequent excessive value, joined to the high duty on the export, the quantities shipped abroad had become inconsiderable. But independent of the intrinsic value of our wool, such was the excellence of the rock-spun yarn of Norfolk, that the Flemish manufacturers, who had ever relied upon the fineness and length of English wool, in making their choicest worsted goods, now adopted every scheme for evading the statute prohibiting the export of this

\* Smith's Memoirs of Wool, vol. 1, pages 106—113.



yarn ; and to carry out their purpose, obtained the assistance of the Flemings, who had settled in the maritime counties of Norfolk and Suffolk. A report was, in consequence, presented to the queen's council, alleging that any place in these counties was not convenient to strangers to dwell in "by reason of their secretly conveying away rock-spun yarn, "(which is more *naturally spun there than anywhere else,*) "as well as the bayes mockadoes, and such other commodities "as are here [Norwich] practised and used."\*

An immense change had been experienced in the modes of manufacturing worsted stuffs previous to the death of Elizabeth. In the interval from the date of Edward IV., to the point of time when the foreigners brought hither the 'new draperies,' a gradual alteration had been adopted in the making of worsted goods, but towards the termination of the rule of this Queen, the recent fabrics of the Dutch and Walloons had almost, if not altogether, supplanted the ancient ones. At least these were not now, if at all made, known by their old designation of beds of the three assizes, double worsteds, and motleys ; but instead new names had been assigned to worsted products. In all the records or notices relating to the trade at this juncture, we do not discover any allusion to the old textures by their former appellations, but in lieu thereof we find 'perpetuanas,' very likely a sort of stamen ; buffyn, a kind of camblet ; mockado, fustians, and bustians. It is highly probable that many of these included in the new nomenclature were only modifications, and some of them slight ones, of the former manufactures. In a manuscript dated 1592, and similar to one printed in a preceding page, but fuller in its details, we are presented with a list of new draperies with their weights and values, which sheds much light on the worsted fabrics of that day.

Bayes double, poize (weight) about	..	32lbs., valued at	..	£4	0s.	0d.
Bayes middle, or 60 Bayes, about	..	30lbs.—None entered	}			
by that name in the Custom House	..	.. .. .				
Bayes single, poize about	.. ..	26lbs., valued at	..	£2	0s.	0d.

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\* Blomefield, vol. 3, page 283.

Frisadose of Pennystones wrought and frised, two goeth for a cloth, and being unwrought, four to a cloth, payeth custom .. .. .	} £0 6s. 8d.
Frisadose made of Worseters, is taken for a long cloth, which is a cloth, and 8yds. payeth custom .. .. .	} £0 8s. 10½d.
Frisadose of Hastings making.—None is entered by that name ..	
Fustian of Naples, poize .. .. . 4lbs., the single piece	} £1 10s. 0d.
rated at .. .. .	
Fustian of Naples, poize .. .. . 8lbs., the double piece	} £3 0s. 0d.
rated at .. .. .	
Grograines broad or narrow, called Buffines, } 4lbs., one with another	} £1 0s. 0d.
poize .. .. .	valued at .. .. .
Carrolles, poize .. .. . 4lbs., valued at ..	£1 0s. 0d.
Knytt Hose, short storks, the dozen pair, } 5lbs., valued at (the pair)	£0 4s. 0d.
poize .. .. .	
Knytt Hose, long storks, the dozen pair, } 6lbs., valued at (the pair)	£0 5s. 0d.
poize .. .. .	
Mockadoes, the single piece, poize .. .. 3lbs., rated at .. ..	£0 13s. 4d.
Pommetts or Plometts, single piece, poize 4lbs., valued at .. ..	£1 0s. 0d.
Rash or Stammetts of Florence, poize .. 25lbs., valued at .. ..	£6 0s. 0d.
Russells broad, poize 7lbs., sold for £3.—None entered in custom	} of long time.
Russells narrow, poize 5lbs., ,, £1 10s.—None entered in custom	
Serge broad, poize .. .. . 11lbs., rated at .. ..	£3 0s. 0d.
Serge narrow, poize .. .. . 6lbs., rated at .. ..	£1 10s. 0d.
Sayes, called Silk Sayes, poize .. .. 3lbs., & dim. (a half,) }	£1 10s. 0d.
rated at .. .. .	
Sayes broad, poize .. .. . 14lbs., rated at .. ..	£1 0s. 0d.
Worsteds broad, poize .. .. . 16lbs., rated at .. ..	£1 0s. 0d.
Worsteds narrow, poize .. .. . 8lbs., valued at .. ..	£0 10s. 0d.
Valures, or Valurts, poize .. .. . 8lbs., valued at .. ..	£1 10s. 0d.
Tukes, or Tuks, being a kind of Buckrom, } 6lbs., rated at .. ..	£0 8s. 0d.
poize .. .. .	
Spanish Ruggs, called Spanish Blankets, not now used, rated at ..	£0 10s. 0d.
English Ruggs.—None are made in England, but Irish Ruggs of } divers sorts, from 10s., to (none shipped over) .. .. .	£3 0s. 0d.
Grogranes Chamblet, poize .. .. . 5lbs., rated at .. ..	£1 6s. 8d.
Coxall Bayes is answered above at large.	

It is to be understood that all that are set down rated, are so found in the book of rates.

All that is set down valued, are so valued by deposition, or by agreement with the customer, and the custom is taken accordingly.

And all these new Draperies, Bayes excepted, do pay a greater value in custom, than commonly is levied upon any kind of wool clothing.\*

In commenting upon this document it may be observed that Frisadoses were a species of bays, and woven both in the

\* Lansdowne M.S., No. 71, Art., 51.

south and north of England. Fustian of Naples, the fabrication of which it will be borne in mind was introduced into Norwich in the year 1554, is here shown to have been made of two kinds, one single and the other double, and from the smallness of their weight and high rate must have been a very fine and costly stuff. Russells also brought hither at the same period were in like manner of light weight and great price. The making of russells, it would appear, had been discontinued, at least they were "not entered in custom." The articles termed grograines or buffin (no doubt the same as 'buffiner' previously alluded to) must too have been, judging from their weight, of delicate texture. So also of carrolles (the same as carrelles before mentioned,) of which it may here be remarked no plausible derivation can be given. Rash or stammetts were, it is asserted by well informed writers, the same as tammies, which they allege is a corruption of the former word. These must have been from their rateable value an exceedingly fine stuff. Serges, both broad and narrow, and of considerable value, are enumerated. Two kinds of sayes were manufactured, one of small weight, called silk sayes, valued at 30s. a piece, the other strong and cheap. The only goods bearing in this list the distinctive name of worsted seems, according to weight, to have been coarse, and were of small cost, and the broader kind ranks as the heaviest except one of the articles purely composed of worsted. Valures [*velours*, velvets] it may be conjectured were similar to the satins introduced into Norwich, in 1554. Camblet is mentioned of fine structure and high price. Mockadoes of one kind only, are here set down and of light fabric weighing only 3lbs. a piece, but earlier in this reign, two kinds were manufactured and shipped abroad. It will be seen that knit stockings are classed of two sorts and bore a very high rate.

Norwich remained as the great emporium of the 'new draperies,' but they also to a small extent were established elsewhere in the kingdom. It has before been noticed that many of the Flemish refugees who fled from the Duke of Alva's cruelty, settled in Colchester and Canterbury. In



the former place they began the manufacture of bayes, which afterwards became notable articles of commerce, and in much repute for excellence of make. In like manner these settlers commenced the fabrication of fine says at Canterbury, and great encouragement being given by the local authorities, joined with due precautions for ensuring the goodness of the fabric, Canterbury says rose also to great estimation, and were much prized as merchandise. But these branches of trade were but small offshoots, the main and to speak generally, the whole of the worsted manufactures centered in Norwich and Norfolk.

Improbable as it may appear, it is nevertheless certain, that, even at this date, the best methods of finishing and dyeing of cloths and stuffs, especially of the fine descriptions, were still in this country little known. Logwood had come into use in the place of woad, but either from its improper application, or other cause, it, along with indigo, was much decried, and the use even forbidden by parliament.\* In all likelihood, the Walloons brought with them a method of beautifying their stuffs, namely, the art of producing a shifting or changing shade of colour in the piece, by the intermixture of weft and warp of different dyes, or some other method, probably copied from 'shot silks,' as they were termed, and similar to a description of goods produced of late years for the worsted piece market. Such a changing stuff appears to have been the "Caungeantries" (see page 112,) evidently a Walloon production, judging from the name, which apparently implies "a stuff, chiefly of one colour, but intermixed with another of less body, so that the colour seemingly changes according to the position in which it is viewed."†

\* Elizabeth, c. 9, "An act for abolishing certain deceitful stuff used in dyeing cloth, &c."

† These are the translated words used by Ducange, in his Dictionary of the Latin of the Middle Ages, in defining 'Cangium,' and it appears likely that Caungeantrie may be a diminutive, or derived from it. The word seems to be from the Norman French, 'Chaunger.' In Savary's Dictionnaire de Commerce, under the word 'Changeant' is the following (translated).—"They call changing taffetas, those taffetas of which the silk warp is of one colour, and that of the woof of another, and which according to its different posture to the light, causes it to change, and gives it various reflections of colour." In Diderot's Encyclopédie, Cangette is described as a small kind of serge of Normandy, where it was much used, and bore a good price.

In the annals of England the reign of Elizabeth stands as a monument of art, literature, and science, distinguished alike for the mighty men of intellect which adorned, and directed this Augustan age, as for the commercial and manufacturing activity of the great body of the citizens. Marvellous indeed at this epoch was the rapid extension of English trade, throwing out suckers into the most remote parts of the earth, from which sprung a mighty growth of commercial enterprise. Companies were formed for trading to Turkey and the East Indies; and the Russia Company, incorporated originally in the last reign, now vastly increased their traffic. Each of these communities by exporting large quantities of cloths and stuffs, gave a lasting impulse and vigour to the textile arts of the kingdom. The queen also first curtailed, and eventually altogether deprived the Hanseatic or Steelyard Merchants of the privileges they for centuries possessed; and which had been found, by this long experience to be exceedingly prejudicial to the interests of English cloth and stuff makers. She likewise encouraged, by various means, the enterprises of the Merchant Adventurers, who now numbered about 3,500 of the most wealthy merchants in London, York, Norwich, Exeter, and other of the greater cities and towns of the realm, and exported, according to Wheeler, their historian, annually above 60,000 white cloths, worth at least £600,000; and of coloured cloths of all sorts, kerseys, bays, cottons, northern dozens, stuffs, &c., 40,000 more, worth £400,000. Harrison, in his *Description of Britain* prefixed to Holinshed's *Chronicles*, after speaking of the imports of the Merchant Adventurers, proceeds—"the wares that they  
 "carrie out of the realme are for the most part brode cloths,  
 "and carsies of all colours, likewise cottons, freezes, rugs,  
 "tin, wool, our best bere, baies, bustian, mockadoes tufted  
 "and plain, rash, fells, &c.\*

Beyond doubt the exports of woollens and worsteds amounted at an early period of this reign to about one million sterling; but at the close thereof so enormous had

\* Vol. 1, page 274.—*London*, 1808.

been the growth, that it is probable they were at least double, for Wheeler declares that then the Merchant Adventurers alone exported of these yearly to the value of one million sterling, independent of the trade to Russia, Sweden, France, Spain, Turkey, and through many other channels.\*

Among other causes too which conspired to spread, invigorate, and increase the textile arts of the kingdom, luxury and show in dress, which now began to prevail among all classes, ranks as a very powerful one, and greatly promoted the home consumption of clothing. The queen participated, and set the example in this national taste: her love of finery in apparel being a ruling passion, which she carried so far that Drake, in his work "Shakespeare and his Times,"† relates, on good authority, that she had three thousand gowns. Norwich stuffs of slight manufacture were now much worn, especially by the middle classes of society.

Equally inglorious to the honour of England, and unbeneficial to manufactures, was the unsteady and imbecile rule of James I., who, unlike his masculine predecessor, had been formed by nature to hold the distaff instead of the sceptre. Commerce and manufactures gradually declined in his day, and the balance of trade, which was large in our favour at the commencement, considerable in the middle, dwindled, till at the close of his reign, that balance stood several hundred thousand pounds against us, from the falling away of the exports, and the increase of the imports of the kingdom.‡ Among the reasons which occasioned a falling off in the woollen and worsted branches in the time of James I.,

\* Quoted in Smith's *Memoirs of Wool*, vol. 1, p. 124.

† Vol. 2, page 91.

‡ Macpherson, vol. 2, p. 274. Complaints being made of the decrease of the exportation of English woollen cloth, and of the increase of the woollen manufactures of Holland, so far, that the Dutch had laid a considerable duty on all foreign woollen cloth imported into Holland, where also great immunities and privileges were granted to foreign manufacturers, a motion was made in the Privy Council, by the Earl of Middlesex, Lord High Treasurer, and in consequence an order of that board was made, that a general state should be taken, of the exports and imports of all England for this year, in order to know on which side the balance lay, which stood



may be mentioned their rapid growth in Holland, where, under the fostering care of the state, they greatly prospered. Added to other causes of the decline of the prosperity of Norwich, continual disturbances arose between the foreign weavers and the inhabitants, which unsettled all the transactions of trade in that city. These dissensions in the year 1613, reached a crisis on the Dutch attempting, contrary to the terms of their admission, to exercise the ancient trades of the city, as well as their own peculiar ones, which conduct provoked the utmost animosity of the Walloons and native citizens, and occasioned alarming riots requiring all the discretion and firmness of the magistracy to quell.

thus, (as given to us in an ingenious Treatise, entitled, the Circle of Commerce, published in 1623, p. 121, by Edw. Misselden, Esq., an eminent merchant,) viz :—

	£	s.	d.
1 Exports to all the world, between Christmas, 1612, } and Christmas, 1613 .. .. . }	2,090,640	11	8
2 The Custom on these Goods .. .. .	86,794	16	2
3 The Impost paid outwards on Woollen Goods, Tin, } Lead, and Pewter .. .. . }	10,000	0	0
4 The Merchants' Gains, Freight, and other petty } Charges .. .. . }	300,000	0	0
Total Exports	£2,487,435	7	10
Imported during that time in silk, Venice Gold and } Silver Stuffs, Spanish Wines, Linen, and other }	2,141,151	10	0
Merchandise, with all the Custom thereon			
Balance gained this Year to the Nation	£346,283	17	10

Macpherson, vol. 2, p. 316. The general balance of the Commerce of England, for the Year ending at Christmas, 1622, as exhibited by Mr. Misselden, (Circle of Commerce, p. 121, edit. 1623,) was as follows:—

	£	s.	d.
The total amount of of Exportations (including therein the Custom at £5 per cent. on such Goods as pay Poundage, the Imposts on Bays, Tin, Lead, and Pewter, and the Merchants' Profit of £15 per cent. together with Freight and petty Charges) was .. .. . }	2,320,436	12	10
The Total Imports, including £91,059 11s. 7d., } Customs, and £100,000 for fine run Goods, &c. }	2,619,315	0	0
Balance lost to England this Year by Foreign Commerce	£298,878	7	2

For many years the embezzlement of the materials employed in the worsted trade had been carried on to a large extent, but at length these frauds reached a height, which rendered it necessary, for the very preservation of the trade, to procure, in 1609, a very stringent statute for their repression.\* This was the first parliamentary provision against the embezzlement of worsted, and the foundation of the subsequent enactments to prevent it.

An Act for the punishing and correcting of deceits and frauds committed by sorters, combers, and spinners of wool, and weavers of woollen yarn.—

I. Whereas, by the trade of clothing, making of bayes, sayes, and other cloths and stuffs made of wool, or partly of wool, many poor people are set on work, and great profit hath grown to the poor and commonwealth thereby, yet, now by the abuse and deceit of the sorters, combers, carders, and spinners of wool, to them delivered, by the persons using the trades aforesaid, and weavers of the yarn made of such wool, who are set on work by the clothier, maker of bayes, sayes, and other cloths and stuffs aforesaid, by unjustly, deceitfully, and falsely purloining, embezzling, selling, and detaining of part thereof, to the great damage of the clothier and others using the trades aforesaid, whereby true cloth-making is much hindered, and idleness doth daily increase, so that many exercising the trades before mentioned are greatly impoverished, and the parties which commit the offences aforesaid being poor, and altogether unable to make recompense or satisfaction for the trespasses, deceits, and abuses aforesaid, have much discouraged the said clothier, maker of bayes, and others of the trades aforesaid, to set poor people on work, whereby much poverty doth increase, and more is like daily to increase, to the great damage and hindrance of the commonwealth. For the prevention and reformation whereof, be it enacted by the authority of this present parliament that all and every such lewd person or persons, who shall at any time, after twenty days next after the end of this session of parliament, unjustly, falsely, or deceitfully convey away, embezzle, purloin, sell, or detain any part of the wool or yarn delivered by any clothier, maker of bayes, sayes, or by any other person or persons making any such cloths or stuffs, to any such sorter, carder, comber, spinner or weaver of wool or yarn, that in every such case and cases, as well the sorter, carder, comber, spinner, and weaver so offending, as the buyer and buyers, receiver, and receivers of the same, knowing the same, being thereof lawfully convicted (by confession of the party or parties so offending, or by one sufficient witness, upon oath before two or more of the king's majesty's justices of the peace, of the same county or liberty where the same offence or offences shall be committed, or if it be within a town corporate, before the mayor, bailiff, or chief officer, and one or more of the aldermen, or most substantial persons of the said town, who shall by force of this act have full power and authority to minister the same oath, and finally to hear and determine all and every the offences aforesaid) shall give and make

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\* Statutes of the Realm, 6th James I.

to the party and parties grieved, such recompense and satisfaction, for such their damage and loss, as by the said justice or chief officers shall be ordered and appointed: And if the party or parties so offending, shall not be thought in the discretion of the said justices or chief officers, able or sufficient, or do not make recompense or satisfaction for the same offence or offences, in such manner and form, as by the said justices or chief officers shall be ordered and appointed as aforesaid, then the party or parties offending, for the first offence to be apprehended and whipped, or set in stocks, in the place where the offence is committed, or in some market town in the said county, near unto the place where the offence or offences aforesaid shall be committed, as shall be limited and appointed by the said justices of the peace, or chief officers; and for the second offence, to incur the like or such further punishment by whipping, or being put in the stocks, as the said justices of the peace or chief officers shall in their discretion think fit and convenient.

II. And be it likewise enacted, by the authority aforesaid, that all and every receiver and receivers, buyer and buyers of any wool or yarn, embezzled or purloined, contrary to the meaning of this act, knowing the same to be embezzled or purloined, shall be subject to like punishment, as by this act is inflicted or provided to be inflicted upon any such person so embezzling or purloining any such wool or yarn as aforesaid.

III. And be it likewise enacted, that all and every spinner and spinners of wool, within the county of Essex, that shall receive any wool to be spun into yarn for any clothier, or maker of bayes, sayes, or other stuffs aforesaid, dwelling in the towns of Cogshall, Bocking, Braintree, Hallstead, Wittam, or Colchester, within the said county, and shall deliver back again the yarn made of the said wool, by any shorter reel than hath been there usual of ancient time; that is to say, the said reel containing two yards about, shall be subject to like punishment, as by this act is inflicted or provided to be inflicted upon any person or persons embezzling or purloining yarn, as aforesaid.

There is an important variation between this statute and the subsequent ones against the same offence, the latter making possession of the wool or yarn without being able satisfactorily to account for it, sufficient proof of its being wrongfully obtained; but the former is silent on this point, merely specifying that the offenders should be lawfully convicted either on confession or the evidence of one sufficient witness. Embezzlement it is shewn prevailed amongst the sorters, combers, carders, and spinners of wool used in making of bayes, sayes, and other cloths and stuffs made of wool, or *partly of wool*, clearly denoting that fabrics of wool mixed with silk or linen (for cotton was then rare) were produced. It will be remarked that the ancient reel in Essex, if not elsewhere, was two yards in circumference.



Several curious pamphlets published in the reign of James I., incidentally disclose some particulars respecting the worsted trade worthy of observation, though their pages are principally occupied with the woollen branch. In one, written in 1613, by John May, Deputy Aulnager,\* as he describes himself, he remarks, that the quality of English wool was so good as to be chiefly desired abroad. This assertion may be taken as correct, as to the general estimation in which this article was held in foreign countries. He observes, that “the clothiers commonly made their recourse to London weekly,” and then notes, that “there are many sorts of cloth or stuff, lately invented called new drapery, and these are out of the reach of the laws made for old drapery, touching length and breadth.” This statement, though literally correct as to any statutory provision touching the length, breadth, &c., of the new drapery, must not be understood to imply that the making of these as to quality and measure was not liable to supervision, for the preceding pages sufficiently indicate that they were; and if deficient in these requisites, the fault lay with the officers appointed to search and seal them. But the most important passage in this work by May, is the following in which, for the first time, the stuffs termed ‘perpetuanas’ come under our notice, at least by that name. “There are some merchants that deal in stuffs termed new drapery, especially in perpetuanas, which are now grown to great use and traffic, but not likely to continue long by their falsehood since their making which brought them into distinction; for where at first their pitch in the loom was twelve hundreth, but now brought to eight hundreth, yet keep their breadth and length. There are also bastard perpetuanas made of says milled, Manchester or Lancashire plains, in form of kersies, to the discredit of those sorts of goods. Fustians, another species of new drapery, are so deceivably made from want of good government that the trade is wholly discredited, and like to be entirely lost.” ‘Perpetuanas’

\* “A Declaration of the state of clothing now used within this realm of England, &c., by John May, a Deputy Aulnager, 1613.”

seem to have been a sort of stuff similar to those afterwards designated everlastings, implying that they were a very durable article like the stamens of former days, and this conjecture is fully borne out by the fact that a bastard kind was made of "says *milled*," or thickened. The fustians here described were a worsted article, but although classed as new drapery were (unless different from fustians of Naples) introduced in the reign of Mary, sixty years previous.

Various passages in the preceding pages demonstrate, that the English were, to a great extent, unskilled in the art of finishing and dyeing cloths and stuffs; and that although the Dutch, with whom we maintained a close and constant intercourse, were excellent dyers, yet their improvements had not been effectively adopted here. Very large quantities of the textile merchandise shipped by the Merchant Adventurers to the Netherlands, were in the white rough state, and were afterwards perfected by the Dutch. Under pretence of employing numerous hands and benefiting the public, alderman Cockayne and some rich citizens of London procured in this reign, by purchase, a patent for the sole dressing and dyeing of woollen manufactures, and to carry out more completely their selfish scheme, obtained a prohibition against the export of these articles in the state in which they came from the loom. But these projectors, acting in the true spirit of monopoly which characterised this age, no sooner obtained the exclusive right to dress and dye, than they performed their work in such a slovenly manner, and so much dearer, that the Dutch refused to purchase, and in retaliation prohibiting the import of these dyed and finished goods, began to manufacture for themselves with such assiduity in this new pursuit, that in a few years they were not only able to supply their own demands, but also enter into competition with us in the foreign markets. Although the most injury was occasioned to the woollen cloth manufacture, yet, that of worsted also very much suffered. But at length, so loud were the clamours of the clothiers, that the patent to Cockayne was, after a few years, rescinded, not however, before it had caused immense



mischief to the clothing trade, which required the efforts of many years to remedy.\*

One of the chief causes of the decay of the worsted trade at this period, undoubtedly lay in the grasping and monopolizing spirit evinced by the Merchant Adventurers. In this corrupt age, when every species of court favour and patronage became the subject of traffic, these merchants, by means of bribes, obtained, about the year 1620, a renewal of their charter, with some extensions, and under colour of this grant arrogated to themselves the sole power of exporting all white cloths, coloured cloths, kersies, bays, says, serges, perpetuanas, and *all other new draperies*, into Holland, Zealand, Brabant, and the parts of High and Low Germany. To forward their selfish and avaricious views, they encouraged the manufacture of low priced and defective goods, which they were enabled by their exclusive right of sale in those countries to vend at exorbitant prices; and thus, not only were English stuffs brought into great disrepute abroad, but the demand for them, owing to the excessive price, became very much cramped. Loud and reiterated complaints were made against this monopoly, and in the year 1622, the merchants of the staple presented, upon the command of Sir John Suckling, knight, and other of his majesty's commissioners, a list of reasons† for the decline of trade, wherein it is alleged, that the Merchant Adventurers, under pretence of their letters patent, had monopolized and engrossed much more trade into their hands than ever they previously possessed. Among these reasons it is declared, that all merchants at large, as well of London as many other cities and towns of the kingdom, had usually in former times, exported coloured cloths, kersies, bays, says, serges, per-

\* "The English at this time were not skilled in the art of dressing and dyeing "English woollen manufactures, but, after they were made here they were vended "into Holland, where they were dressed and dyed."—Coke, p. 59, quoted in Smith's *Memoirs of Wool*, vol. 1, page 143. Cockayne's patent, according to several authorities, was granted in 1616.

† "Probable reasons for the decay of trade of cloth, and other manufactures "made of wool, delivered by the mayor and company of merchants of the staple "of England, upon command of Sir John Suckling, knight, and other his majesty's "commissioners."—Cotton MSS., Galba, E. 1. f. 362.



petuanas, and other new draperies, which then they might not, under pain of being prosecuted by the Merchant Adventurers, and imprisoned until they would either be bound to forbear trading, or solemnly to forswear trading, so that many who dealt in such merchandise to the amount of £100,000 a year and more, were compelled to abandon the trade. Also, that the merchants of the staple, who had been a memorable company from the time of Edward I., until the present, and shipped abroad manufactures of wool,\* were now precluded from such right, and that the great trade of exporting the draperies of the kingdom, formerly distributed among many other merchants, was then in the power of the Merchant Adventurers alone. These complaints, so manifestly well grounded, were at length effective, for parliament, in the year 1622, interfered, and swept away the noxious exclusive privileges of these Adventurers; and fully opened the cloth and worsted export trade, by declaring that “as well Merchant Adventurers as all other merchants promiscuously, might transport to all places, all northern and western dozens, kersies, and *new manufactures*.”†

Out of this struggle to destroy the monopolies of the Merchant Adventurers arose several spirited pamphlets on each side, and from one of these,‡ by Edward Misselden, a noted writer of the period, a few passages illustrative of the worsted trade at this juncture, are selected.

\* Misselden, in a tract in defence of the Merchant Adventurers, entitled the *Circle of Commerce*, states that, “the merchant staplers never shipped any cloths as staplers, but as Merchant Adventurers only.”

† Complaints having been made to parliament, that, on account of the increase of the Dutch manufactures, the clothing trades in England were impaired, the House of Commons resolved, that the Merchant Adventurers’ Company setting imports upon our cloths was a grievance, and ought not to be continued; and that all other merchants, as well as that company, might transport everywhere northern and western dozens, kersies, and *new draperies*; also, that other merchants, beside the Merchant Adventurers’ Company, might freely trade with dyed and dressed cloths, and all sorts of coloured cloths into Germany, and the Low Countries.—Macpherson, vol. 2, p. 327.

‡ “Free trade, or the means to make trade flourish, wherein the causes of the decay of the trade in this kingdom are discovered, and the remedies also to remove the same, are represented.”—*London*, 1622.

“The consideration of the draperies of this kingdom” says he, “is of the highest consequence—they are termed *old* and *new*. By the old are understood broad cloths, bayes, and *kersies*; by the new, *perpetuanoes*, *serges*, *sayes*, and other manufactures of wool. The causes of the decay of trade in these draperies, are either domestic or foreign. The domestic causes are some past, some present; those past are apparent in the late disturbance of the cloth trade, (occasioned by Alderman Cockayne’s patent,) which is so obvious, that I had rather pass it by, than press upon it, because it is past, and I would to God that so were the effects of it also. In charity we may think it good in the purpose, though it proved ill in the practice: for thereby the draperies in this kingdom are much diminished, and the foreign advanced and advantaged. The quantities of which latter were formerly few or none, but now they exceed our highest numbers issued out of the land.”

Again, in animadverting on the ill effects which accrued from what he terms ‘ungoverned trade,’ he proceeds to shew that by it—“the trade of his majesty’s subjects into the dominions of the king of Spain and the mediterranean sea, consisting in bayes, *perpetuanoes*, *kersies*, wax, tin, lead, and other native commodities of this kingdom, is betrayed both into the hands of those with whom we are in amity, and others that are with us at enmity. The one taketh advantage of our unmerchantlike courses for lack of order; the other of ships sent forth straggling for lack of fleets, whereby the *perpetuanoes and other new draperies*, have by little and little been made worse and worse, so that they are now become quite out of use, the trade lost, the traders ruined, the manufactures by other nations supplied.”

He then proceeds to exhibit the ill effects arising from the false sealing of draperies, and adds,—

“Nevertheless, it may please his majesty to commit the care and execution of searching and sealing, to some of the principal cities and towns in the clothing counties, where broad cloths, *kersies*, and *perpetuanoes* are made, and to make them the overseers therein, instead of those ignorant

“negligent searchers, with reasonable allowance for their  
“pains, which I am confident would prove a singular remedy.  
“For, we have not only the example of the Low Countries,  
“where this course is taken, but, also here with us, as  
“Worcester for that sort of cloths, Colchester for bayes, and  
“Canterbury for says. In all which places the former abuses  
“are removed by this means, and the cloths and bayes, and  
“manufactures of those cities, triumph in great credit and  
“estimation.”\*

It will be observed that Misselden terms perpetuanas, serges, and says, new draperies; and alleges, that the export of them had much diminished; that perpetuanas and other new draperies were shipped to Spain and the Mediterranean. Another important fact relating to the worsted trade is, that, Colchester was now famous for bays and says, and Canterbury for says; and, that these articles being there preserved with peculiar care from debasement, were held in great estimation. It has before been noticed, that a portion of the Flemish weavers, who fled to England in the reign of Elizabeth, settled at Colchester and Canterbury, and doubtless there planted these manufactures, which now, it is certain, were in a thriving state.

Ever since the first introduction of the ‘new stuffs and draperies’ into Norwich, during the last reign, violent contentions had from time to time occurred, as to whether these novel articles were liable to subsidy and duty in like manner as woollen cloths; and also whether they were worsted fabrics coming under the provisions of the act of parliament passed in the seventh year of Edward IV., and subject to the regulations and authority of the wardens thereunder appointed. Towards the close of the reign of James I., these disputes rose to a high pitch, and occasioned much litigation, which for a long space of time produced an exceeding ferment among the worsted weavers of Norwich, and acted as a very injurious check upon the trade. From the documents still

\* In the reign of James I., there were several good and laudable orders and constitutions made for the regulation and protection of bay and say makers residing at Colchester.—Strutt, vol 2, p. 192.



extant concerning these vexed questions, some singularly valuable and rare information can be culled, tending to elucidate the ancient condition of the worsted manufacture, and enabling the reader to form a tolerable exact notion of the nature and qualities of the olden fabrics from early times downwards.

The first of these documents from which extracts will be taken is a brief\* drawn up on the part of the plaintiff, in a suit brought in the Exchequer, to enforce the payment of subsidy and duty on the 'new draperies.' In this brief the principal topics and reasons advanced in favour of the plaintiff are that the alnage of all manner of cloths was an office at common law, granted by the king; that worsteds, says, stamens, reverses, satins, fustians of Naples, and such like stuffs made of rock spun yarn, (alias worsted yarn,) were woollen cloths; that the worsted weavers in Norwich and Norfolk were incorporated by the name of the "*Gardini 'artis sive mysterii textorum panni lana vocati worstedes in 'civitate Norwich et com: Norff;*" and the worsted weavers of Lynn incorporated by the name of "*Textores panni lana 'vocati worstedes inhabitantes villam de Lynn;*" that subsidy and alnage was due for all manner of cloths made from wool; that all manner of cloths made for sale and offered to be sold before they were sealed, stood subject to seizure; that says, stamens, satins, reverses, russells, fustian of Naples, and such like woven of worsted yarn were not worsteds, but liable as woollen cloths to alnage and subsidy: then follows the prayer which was, 1st, to have the duties for these stuffs in time past and to come decreed: 2nd, that all saleable stuffs should be sealed or in default thereof seized without contradiction.

What was the result of this suit in the Exchequer does not appear, but it is manifest that the dispute as to whether the 'new stuffs' were under the jurisdiction of the statute 7th Edward IV. or not, still continued. On the first settlement in Norwich of the foreign weavers of these fabrics, it will be remembered that thirty wardens were especially appointed

\* Preserved among the papers of Sir Julius Cæsar, (who was master of Requests in the time of James I.) Additional MSS., British Mus: No. 12504, Art. 65.

to inspect, superintend, and seal the new manufactures. It is apparent, however, that from some cause or other, these wardens had lost their authority, and attempts were made by several of the aldermen of Norwich to arrogate to themselves the right of searching and sealing these 'new draperies,' and endeavoured to obtain the concurrence and aid of his majesty's privy council to this project. In consequence, the latter referred the subject to the corporation of Norwich, and required that body to certify to them what course would be most fitting for the government of those stuffs. The worsted weavers of Norwich were exceedingly indignant at the attempts to put them under new government, and under the influence of this feeling the corporation presented a report to the privy council adverse to the claim of the aldermen, and sustaining the rights of the worsted weavers. Below are printed the essential portions of this document.\*

After setting out "that of ancient time the trade of worsted weaving was in great estimation, especially in the city of Norwich and county of Norfolk, as being the only means of maintenance of the poor, and a great means of the happy and flourishing state of the city of Norwich, as being the proper place whereunto the stuffs made by the worsted weavers were daily brought to be sold," the law promulgated, in the seventh year of the reign of Edward IV., for the regulation of the worsted trade, is recited, in substance, and it is declared that from that time until then, [1618,] the wardens thereby appointed had been duly, every year, sworn, and the worsted weavers ordered and governed accordingly. That in a very short time after the making of such law of Edward IV., many stuffs were devised by the men of the said trade, which were called by other names, yet the same were accounted as worsteds, and governed according to that law, and although at that present time nor for many years before there had not been any stuffs usually made, called by the proper ancient name of worsteds, yet the occupation of worsted weaving was continued by the makers of stuffs then made

\* Cæsar papers, British Mus: Addit. MSS., 12504, Art. 63.

within the city and county, and the men of that trade so making stuffs were known, styled, accounted, and called worsted weavers, and as they [the corporation] were credibly informed, there were, at that present time in Norwich and Norfolk, at least four hundred master workmen, who had in their charge many apprentices and journeymen, all which had served and were then bound to the occupation of a 'worsted weaver.' That many apprentices being by the then existing controversy emboldened, had mutinously contended with their masters, fearing that they were bound to an occupation whereby they should have no more benefit than if they had not served at all, and that it was to be feared should these new stuffs not be considered under the control of the law of Edward IV., persons not having served as an apprentice to a worsted weaver would take upon themselves to weave and make such stuffs. That it might be expected that "worsted, stamyns, sayes, chamblets, and the like," which the petitioners took to be without controversy within the meaning of the law of Edward IV., would again be in use as some of them were and had always continued since the making of the said law. The petitioners therefore desired that the ancient course of government might be rectified and continued.

Several very important particulars in this report require marked attention, namely, that from the time of Edward IV., downwards, the jurisdiction of the old wardens had been uninterruptedly continued; that four hundred master worsted weavers were located in Norwich, which, when it is remembered each master employed a considerable number of journeymen and apprentices, gives the impression of a vast number of persons being then employed in the Norwich trade; and, that worsteds, stamens, says, and chamblets were ancient worsted stuffs, but, that the manufacture of some of them, especially those distinctively termed 'worsted' had been discontinued.

Appended to the report, is an abstract of ancient orders, made for the regulation of the worsted trade, and setting out the course of government practised in Norwich, for cloths called worsteds, as for like cloths called by other names,



since the making of the law of Edward IV., wherein are more particularly noted such presentments as mention stuffs, called by other names as “stamyns, sayes, carrolles, bustians, “damasks, damasks ollyetts, and the like; double worsteds, “chamblets, narrow chamblets, tuft mockadoes, carrells, “caffers, grograines, calamancoes, ellementes, phillizellies, “carlownes, peropus, serges de boys, cheveretts, and sleyes.” The form is given of one of these presentments, made in 1492, respecting two pieces of worsted, called ‘ten yards.’ At the same time, two beds of say of the middle assize, and one piece of worsted, ‘ten yards,’ of a white colour, were condemned for being defective. In the ninth year of Henry VII., two pieces of stamine, of the length of thirty yards, were condemned. It was also, at the same time presented, that John Bull the elder, and John Bull the younger, both of Norwich, exercised and pursued the art of worsted weavers, where they were never apprentices, and that they made counterfeit work, called checkerwork, in the likeness of worsted, and trafficked therein.

In support of the statement in their favour from the corporation of Norwich, the worsted weavers presented to the privy council, ‘Allegations’ to prove that the new draperies were essentially the same as the old fabrics termed worsted, and were in like manner to be considered as under and governed by the law of Edward IV. These ‘Allegations’\* are pregnant with valuable and highly suggestive facts bearing on the worsted manufacture, explaining the methods whereby the ancient and modern fabrics were woven, and altogether containing a mass of particulars, alike interesting to the antiquary and general reader.

Allegations on behalf of the worsted weavers, that the stuffs called new draperies, or of new invention, are worsted cloths, and ought to be continued within the government of 7 Edward IV., chap. 1.—

Worsteds in ancient time, were understood to be the several cloths made by the tradesmen of that mystery, of the yarn then spun, and either received the name of worsteds from the place where they were first made, which is supposed to be at Worsted, a town near Norwich; which, if that be so, then, as it is to be presumed, stuffs of divers kinds were there made, so then the name was equal to all.

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\* Cæsar papers, British Mus: Addit. MSS., 12504, Art. 64.

Or else they were called worsteds by a figure, when the whole is taken for the parts, or as the genus for the species, so properly as worsted, for matter is the ground for texture, and workmanship the basis of all other stuffs both of ancient and new invention; so that the stuff called new draperies or of new invention, be but the species thereof.

And that the stuffs of new invention do not vary from the materials of the worsteds, nor from the texture, but only by varying according to the will and art of the workman, sometime in one kind and sometime in another, as most other trades manual do, to make the same more vendible, and to that purpose do also give thereunto new names; yet, that variance of art and appellation doth not disaffirm, but, that it still remains as a species of his genus, one of the kinds thereof; and so worsted cloths.

For demonstration thereof, a buffyn, a catalowne, and the pearl of beauty, are all one cloth; a peropus and paragon all one; a saye and piramides, all one; the same cloths bearing other names in times past. The paragon, peropus, and philiselles may be affirmed to be double chamblets; the difference being only, the one was double in the warp, and the other in the weft. Buffyn, cattalowne, and pearl of beauty, &c., may be affirmed single chamblett, differing only in the breadth. The say and piramides may also be affirmed to be that ancient cloth, mentioned in the said statute, called a bed; the difference only consisting in the breadth and fineness.

For further demonstration, the cloth denominated the worsted, and the cloth called the bed, for the fashion and working were all one, being both of the same draught in the hevill, and both alike wrought with four treadles, yet the one was a fine and a thick cloth, and the other a coarse and a thin, and differed as much in vein, as a coarse buffyn from a fine piramides.

To make of this worsted a stamin, was but to make it narrower and thinner in the stay; to make the bed a say, which served for apparel, was to make the same much narrower and finer; this cloth hath continued its name and fashion till this day; but, now lately, by putting the same into colours, and twisting one third of one colour with another colour, being made narrow, it is now called piramides.

From worsted are derived, in another line, other cloths.

A worsted was wrought with four treadles; to make thereof a bustian, is to weave with three of the same treadles; to make the same a double chamblet, is to use the two right foot treadles; to make it single, is to use the two left foot treadles; to make this a philisello, a peropus, a paragon, or a buffyn, is but to alter the breadth, and to make them double, treble, or single in the striken; and to make this buffyn a catalowne, is to twist a thread of one colour with a thread of another, and strike it with another colour; to make the same a pearl of beauty, is to make it striped, by colours in the warp, and tufted in the striken.

From the double and single motley, in the statute named, being in the judgment of ancient workmen a branched cloth, the checker worsted, all damasks and branched works take their beginning; *et sic de cæteris, mutatis mutandis*; so as hereby appeareth, that the difference between the ancient and modern stuffs, termed of new invention, is but in the lengths, breadths, fineness, coarseness, colours, &c., being but additional, and derived from the same genus, basis, or ground. And albeit it may be said, that *cætera præterire*, yet that new stuffs are but branches of the same tree, and by revolution of time, the ancient stuffs, in another generation, as the like thing in other trades, will become the new again.



Ample proof is, by the two preceding pages, furnished, that the worsted manufacturers in these early days indulged, as they do at present, in appropriating to their productions high sounding and catching names; and distinct enough notions are afforded, to enable us to judge what sort of fabric were several of these oddly named articles. For instance, the 'Pearl of Beauty' it is evident, was of the nature of single camblet; and in like manner a sufficient clue is given, to indicate with tolerable certainty, what were the kinds of texture of many other of the olden worsteds. Calamancoes, singularly enough, appear in the list of articles woven in this age. The statements in the 'Allegations' before printed, are highly illustrative of the modes of manufacture then adopted, and more fully explain, upon careful comparison, many previous passages in this work; but, the whole subject of ancient worsted fabrics is intricate, as they necessarily from time to time changed—sometimes in kind, either partly or wholly, still retaining the former name—and sometimes changing in name only. The reader must be warned against adopting, with implicit confidence, some of the assertions and conclusions contained in these 'Allegations,' especially such as tend to shew, that the worsted fabrics of the time of James I. were essentially the same as those of more remote periods, when it is self evident that between them much dissimilarity must have existed, the result of improvements ingrafted in the interval, and by degrees upon the ancient manufactures.

Wool, in the reign of James I., fell much in price, very clearly demonstrating the depression under which our textile industry laboured. In a pamphlet by Gerard Malynes,\* printed in the year 1622, it is asserted, that the price of English wool had fallen since the accession of that king, from thirty-three shillings to eighteen shillings a tod,—an immense depreciation! So much discontent accrued from this state of affairs, that the Executive issued a special commission, in the same year, to inquire—1st, Why wool had fallen in price?

\* "An Answer to a Treatise of Free Trade lately published."



2nd, How to prevent the exportation of wool and woollen yarn? 3rd, How cloth and *stuffs* made of our own wools might be more generally worn? Whether the commissioners made any report on these momentous subjects or not, seems doubtful, inasmuch as upon search it cannot be discovered. However, to provide a remedy for some of these grievances, the king published a proclamation,\* forbidding, under heavy penalties, the exportation of wool, woollen yarn, &c., wherein it was declared, that the carrying abroad of these materials had become a great means of the increase of foreign manufactures, and of the decline and decrease in the sale of the domestic ones. From this date we may deduce the first act of authority absolutely prohibiting, for continuance of time, the exportation of wool, though the contrary has been affirmed, namely, that such was the case in the reign of Edward III., when it was only occasionally, to suit the royal convenience, forbidden, and leave even then granted to particular persons by license.

Throughout the early years of the reign of Charles I., much manufacturing activity prevailed, and the stagnation of trade, experienced under the rule of James I., gradually gave way. The East India Company, who were among the largest exporters of Norwich stuffs, began to extend their commerce, and purchased great quantities of these descriptions of goods for the India market,† in which they “were very acceptable and fetched high prices.” Also the Turkey Company took weighty stocks of stuffs for the supply of the Levant; and the Norwich trade, recovering from its prostrate condition, soon began to assume a thriving and healthy appearance. But, unfortunately from the intolerance and wrongheaded zeal of Laud, the increasing prosperity of

\* Proclamation issued in 1622.

† To prevent an excess of private or clandestine trade being carried on to the East Indies, by the officers and sailors in the East India Company's ships, a proclamation was issued, declaring the wares and articles licensed to be exported thither, among which are enumerated “Perpetuanas and Drapery.”—*Fœdera* vol. 19, p. 335.

Norwich received a rude shock. The numerous Dutch and Walloon protestants, who had settled in Norfolk, Suffolk, Canterbury, Colchester, and other places in the kingdom, had, along with their offspring, until now been permitted to follow their own religious opinions and worship; but the imperious archbishop hit upon a nice distinction, and while he consented to allow toleration to the foreign born protestants, issued an order compelling all their children born in England, to attend the parish churches.\* In vain the Walloons of Norwich pleaded the toleration awarded to them since the days of Edward VI., but without avail; so that eventually thousands of families of the descendants of the Dutch and Walloon refugees, being continually harassed by archbishop Laud and his minions, and obstructed in that for which their fathers had sought refuge in England—the free exercise of their religion and liberty of conscience—prepared to emigrate to more tolerant lands; and after many fruitless attempts to avert the hostility of these ecclesiastical despots, a multitude at length migrated to New England and other parts of America, and also to Holland. A large number of Norfolk worsted weavers settled in Leyden and other towns of Holland, where the authorities, following the wise example of queen Elizabeth to the fathers of these refugees, granted them many favours; and in return their presence gave an impetus to the Dutch worsted manufacture, very prejudicial to the Norwich trade.† For besides the large draft of the best weavers, who left the country, a heavy amount of capital was also withdrawn from the business, whereby all the

\* Laud, in pursuance of instructions, made a report concerning the ecclesiastical state of the province of Canterbury, in which he prays the king, that such of the French, Italian, and Dutch Congregations as were born his subjects, might not be suffered any longer to live in separation from the church of England, which he insinuated stood in danger from the toleration of foreign protestants. He evidently considered it a mighty act of grace, to allow such of them as were not born in England, to enjoy their own mode of worship, but compelled their children to attend the parish churches.—Macpherson, vol. 2, p. 382.

† When the king, in the year 1640, called the Long Parliament together, among the grievances alleged against him, was, “that divers clothiers had been forced away, who had set up their manufactures abroad, to the great hurt of the kingdom.”—Rapin, vol. 2, p. 353.

concerns of trade, in Norwich and Norfolk especially, were seriously disarranged. Thus, the demon of religious intolerance is ever on the wing, to blight the social peace and prosperity of nations, and destroy those blessings which most conduce to the welfare and elevation of mankind !

At the same period that these persecutions of Laud prevailed, the troubles which were ripening in Scotland into open rebellion, also exceedingly contributed to cast a damp upon the woollen and worsted branches of industry; and to fill up the measure of inauspicious events affecting the clothing arts, the Merchant Adventurers, who, it has in preceding pages been related, were a main cause, by their evil practices, of the decay of trade in the last reign, again obtained by corrupt arts and influences, their former baneful exclusive privileges. A proclamation was issued by the king, prohibiting “all persons from exporting any white cloths, coloured cloths, cloths dressed and dyed out of the whites, Spanish cloths, bays, kersies, perpetuanoes, stockings, or any other English woollen commodities, to any part of either Germany, or of the seventeen provinces of the Low Countries, save only to the mart and staple towns of the fellowship of Merchant Adventurers, and that none whatever should trade to the said countries of Germany and the Netherlands, in any of the species of woollen goods above named, except such as were free of the said fellowship.”\* Thus, the export trade to those parts, which had in the preceding reign, after arduous struggles, been opened for the benefit and extension of the woollen and worsted arts, was, much to their detriment, again closed to all, except this monopolizing and exclusive company. The historians of the period relate, with sufficient minuteness, the base methods pursued to obtain these advantages. To the more sordid of the court favourites, sums of money were distributed; to others, jewellery and smaller presents,—all truthfully exhibiting the sunk and demoralized state, as well of the merchants who were the givers, as of the recipients.

Likewise another competitor in the worsted export trade had lately sprung up, tending to diminish the demand for stuffs.

\* Rymer's *Fœdera*, vol. 19, p. 583.



France had recently become an important manufacturing nation, and not only supplied her own wants, but, in addition largely shipped worsted goods of various kinds, to countries where we had formerly enjoyed either the whole or the greater portion of the commerce in those articles. The worsteds of Chalons, (whence the name of our pieces, termed Shalloons,) Chartres, and other towns in France, had attained celebrity for fineness and variety of texture, and especially competed with us in the Levant, whither the English Turkey Company transported the Norwich productions. England had formerly enjoyed pre-eminence in the making of Camblets, but now the French weavers began to rival us in that respect. Every expedient that could be devised, was adopted to procure the English long wool, to enable them to carry on with success the production of their best worsteds; and when the needful supply could not be obtained from England, Irish long wool, though inferior, was substituted, as being more readily obtained. Vast quantities also of Spanish wool were imported into France, to mix with other wool, and the ministers of that country spared no effort or expense to extend and improve the worsted trade. But the English stuffs possessed so excellent a reputation, probably more for durability than delicacy of fabric, that the French were at first obliged to foist their fabrics upon the inhabitants of the Levant, by selling them under the lure of English names.

With all these drawbacks, Norwich stuffs formed a considerable item of foreign trade. Large consignments for this purpose were forwarded to London, to be shipped abroad. In a former page it is related, that the corporation of London attempted to prevent, within the limits of their jurisdiction, the clandestine sale of Norwich stuffs, by rendering it imperative that they should be brought to Blackwell Hall, the common clothing mart of the city, before sale. Although the Norwich merchants strenuously resisted this attempt, they were eventually compelled to yield, and in the thirty-ninth and forty-third years of Elizabeth's reign, two acts of parliament were passed, ordaining, that all manufactures of wool brought to London to be sold or transported abroad, should

be previously carried to that Hall. Also, in the eleventh year of James I., a proclamation was issued, commanding "all "sorts of vendible cloths, bays, felts, says, stuffs, as well old "as new draperies, made in England and Wales, to be brought "to Blackwell Hall." Charles I., who was in many respects a very counterpart of his father, published in 1638, a like proclamation,\* which further contained a prohibition against making contracts for those kinds of merchandise, and bringing them afterwards to London, to inns and warehouses, to be sold. Thus it seems, that the practice of the Norwich merchants in previous times, of bargaining for these stuffs at their inns in London was effectually suppressed, or at least intended. One of the reasons for enforcing the conveyance of Norwich stuffs to Blackwell Hall, arose from the fact, that the duties levied there belonged to Christ Hospital, but, another was also assigned, namely, that the goods not being otherwise properly searched and sealed, were brought into discredit abroad.

On the commencement of the disastrous civil war between the king and parliament, Norwich, siding with the latter, was deeply implicated in the miseries of the struggle, and its trade suffered much decay. But when the parliament had usurped the reins of government, they framed many wise laws and ordinances for promoting the trade and commerce of the kingdom. A more liberal policy was on the whole adopted; all laws, prohibiting foreign protestants or their descendants the enjoyment of full liberty of conscience, were revoked, and those, who had been driven abroad by the intolerance of Laud, were invited to return with their families. Many artisans availed themselves of this offer, and an Order in Council was issued, setting forth that the refugees had always found England an asylum wherein they had freely exercised their religion and trade, and enjoining the mayor, commonalty, and artisans of the city of Norwich, to suffer them to enjoy all the privileges granted to them in former periods.

Although a century had nearly elapsed since the introduction of the foreign weavers into Norwich by the permission

\* *Fœdera*, vol. 20, p. 221.

of Queen Elizabeth, they had never perfectly amalgamated with the citizens, and occasionally, as before remarked, outbreaks of a very dangerous and alarming nature occurred between them. Numerous evidences are afforded that the mass of these foreign weavers had, from some cause or other, fallen into disrepute in that city. Many of them, it is evident, were a disorderly ill governed people; for the corporation were induced to promulgate a law, in the year 1643, whereby it was ordered, that “no stranger should be allowed to walk the streets, play, or tipple, during divine service on “Sundays.”

Several schemes were, during the Commonwealth, brought forward for benefiting the clothing trade. Among these there was one submitted to parliament, in which it was proposed to obtain all the Spanish wool into our own hands and thus cripple the commerce of the Dutch and French.\* By this project it was contemplated “that we should increase the vent “of our manufactures in Biscay. For whereas the Hollanders “have, of late years, brought and exported from thence four- “fifths at least of all the wools, and sold there proportionably of “their country’s stuffs and says, they will now be discouraged “from coming to market, where they cannot have any com- “modity to make their return in, or relade their ships withal.” Also that we should retaliate with severity upon the French for prohibiting the import of our manufactures, by obtaining the Spanish wool wherewith they, in great part, carried on their own. The project, however, does not appear to have taken effect. But to encourage the Levant trade, which had been much damaged by French competition, parliament promulgated an ordinance favourable to the Turkey Company, in which it was declared, that for the encouragement of that fellowship, which, besides the building and maintaining of divers great ships and the venting of kersies, *says, perpetuanoes*, and several other commodities, had been found very serviceable to the state.† With the intention of

\* “Considerations of the advantages to the Commonwealth of England, by getting all the Spanish wools into English hands, and some humble offers at the “means to effect the same.”—Smith’s *Memoirs of Wool*, vol. 1, p. 186.

† Scobell’s *Acts and Ordinances of Parliament*, Anno. 1643.



promoting the prosperity of the domestic industry, parliament passed an ordinance in the year 1647,\* prohibiting the exportation of wool under very heavy penalties. The French and Dutch held out such pecuniary inducements to the smuggling abroad of our long wool, that it required all the precautions which could be devised for its prevention. In a pamphlet published about this period, it is related that the smugglers shipped the “best and finest wool, *combed* into “jarsies presently fit for spinning; and these are contrived “into bales as those of drapery, and in all points so cunningly carried as to be seldom discovered.” On perusing Whitlock’s Memorials, it will be remarked, that the Long Parliament was often occupied with measures for effectually preventing the exportation of wool and extending the clothing trades.

Among these measures, there are some which exclusively relate to the worsted branch. The number and powers of the wardens under the authority of the Statute of the seventh year of Edward IV., having been found insufficient, and to prevent dissensions for the future as to the jurisdiction of these wardens, an Ordinance was passed, declaring “How Norwich stuffs should be made and tried.”† After reciting, that divers abuses had then of late years been had and used in the making of worsteds and other stuffs, commonly called *Norwich stuffs*, and in the reeling of yarns whereof the said stuffs were made, for preventing such abuses it was enacted, that there should be a corporation within the city of Norwich and county of Norfolk, consisting of two presidents, twelve wardens, and forty assistants, chosen yearly, upon the last Wednesday in November; of which one president, six wardens, and twenty assistants were to be chosen by and from the master weavers of Norwich, and the remainder by and from the master weavers of Norfolk. And that the same should be one body politic and corporate in law, with perpe-

\* “An Ordinance of Parliament, to prohibit the exportation of wool, woollen “yarn &c., beyond sea or into Scotland.”—Passed 19th January, 1647.—Smith’s *Memoirs of Wool*, vol. 1, p. 182.

† Scobell’s *Acts and Ordinances of Parliament*, Anno 1650, ch. 36.

tual succession, under the name of "The presidents, wardens, "and assistants of the worsted weavers of the city of Norwich "and county of Norfolk," and to sue and plead, and be sued and impleaded by that name, with power to take or receive for the benefit of the corporation, any lands, tenements, or personal estate, not exceeding the yearly value of one thousand pounds. Also that thirteen of the said corporation, whereof one president and seven or more wardens were to be present, should form a quorum, and pass bye-laws and regulations for the good government of the said trade and adopt a common seal. The two following clauses are the only ones that are sufficiently of note to be worthy of insertion here.

All yarns, called worsted yarns, or used by the worsted weavers, shall be made without fraud, and shall, before the same be put or offered to sale, be reeled on a reel of a full yard about, every reel staff containing fourteen leas, and every lea containing forty threads, twelve of those reel staves making a dozen, and twelve of those dozens making a gross. [Provision is made for the seizure of defective yarns, which were to be brought into "the common hall of the corporation aforesaid."]

That all sorts of stuffs, whether woven of wool only, or of wool and other materials, within the city of Norwich and county of Norfolk, or either of them, shall be under the power, government, and regulation of the said corporation, in such manner, as by this and other acts of parliament, and the bye-laws made and to be made by virtue hereof, are or shall be established, (except such stuffs as are under the regulation of the wardens and fellowship of the mystery of russell sattins, sattins reverses, and fustian, of Norwich making, within the said city of Norwich,) and, that all stuffs made or to be made under the regulation aforesaid, before the same shall be offered or put to sale, shall be brought to some convenient place or places within the city of Norwich and county of Norfolk, to be appointed by the said wardens, or the more part of them, to be viewed and searched by the said wardens, or any two of them, and if found to be well and truly made, to be sealed and allowed accordingly.

Thus, a corporate body of fifty-four persons was established for the regulation of all kinds of worsteds, made in Norwich and Norfolk, except russell satins, satins reverses, and fustians of Norwich, which still continued subject to the corporation of wardens, constituted under the act of parliament passed in the reign of Mary. This ordinance, made in 1650, was declared to continue for only three years, but was renewed in 1653, (see Scobell's Acts and Ordinances, &c.) and again in the year 1656.

Immediately after the Restoration, the people were so overjoyed, that the king had, with alacrity, granted to him by the House of Commons, a subsidy, arising from customs or duties upon all merchandise exported and imported: an impost of one shilling in the pound being impressed upon all worsteds and new draperies, exported by denizens; and an additional shilling in the pound, on those shipped by strangers.\*

As a guide in estimating the value of the articles, and rating them accordingly, a new book or schedule of rates was framed, entitled, "The rates of merchandise, that is to say, "the subsidy of tonnage, the subsidy of poundage, and the "subsidy of woollen cloths or old drapery, as they are rated "and agreed upon by the Commons' House of Parliament, set "down and expressed in this book." From this authentic testimony, two groups of extracts have been drawn. The first one exhibits no fewer than twenty varieties of worsteds imported into the realm from foreign parts, and renders it certain, that now, whatever may have been the case previously, the finest of these textures worn or adopted in this country, were foreign productions. An indication is also obtained as to the places whence the different species were brought. Whilst perusing this list, the reader is expressly warned against deducing any precise opinion as to the positive values, from those set against their names, because, that would certainly be a fallacious criterion,—the values in the book of rates being affixed, it is assumed, according as it was deemed desirable to tax high or otherwise these goods, and not according to their saleable price. Some even appear to be rated so excessively as almost to amount to a prohibition.

#### MERCHANDISE INWARDS.—

	£	s.	d.
Bayes of Florence, per yard, .. .. .	1	5	0
Beaupers, the piece containing 24 or 25 yards, .. .. .	1	5	0
Bombazines or Boratoes, broad, the single piece not above 15 yards, .. .. .	7	0	0

\* 12 Charles II., chap. 4.—Woollen cloths called old draperies, paid, if not exceeding twenty-eight yards long, and sixty-four pounds weight, 3s. 4d. each by denizens, and 6s. 8d. by aliens. If of greater length or weight, proportionably more duty.



Buffins, Mockadoes, and Lisle Grograins, narrow, the } single piece not above 15 yards, .. .. }	4	5	0
Bustians, the single piece not above 15 yards, .. ..	2	0	0
Carrells, the piece containing 15 yards, .. ..	1	6	8
Chamblettes Unwatered, or Mohairs, the yard, .. ..	0	3	0
Do. Watered, the yard, .. ..	0	5	0
Do. Half Silk, Half Hair, the yard, .. ..	0	10	0
Fustians, Naples' Fustians tript or velure plain, the half } piece containing $7\frac{1}{2}$ yards, .. .. }	4	0	0
Naples Fustians, tript or velure plain, the piece contain- } ing 15 yards, .. .. }	8	0	0
Naples Fustians, tript or velure plain, the yard, .. ..	0	10	0
Do. Wrought, called Sparta Velvet, the } half piece, containing $7\frac{1}{2}$ yards, .. .. }	6	0	0
Osbro or Augusta Fustians, the piece containing two } half pieces, .. .. }	4	10	0
Osbro, with Silk, the yard, .. ..	0	8	0
Do. of Weazell, the piece containing two half pieces, ..	8	0	0
Hose of Cruel, called Mantua Hose, the pair, .. ..	0	10	0
Mocado Ends, the dozen pounds, .. ..	4	0	0
Sayes, Double Sayes or Flanders' Serges, the piece con- } taining 15 yards, .. .. }	9	0	0
Double Say or Serge, the yard, .. ..	0	12	0
Mil'd Sayes, the piece, .. ..	6	0	0
Hounscot Say, the piece containing 24 yards, .. ..	6	0	0
Serge of Athens, the yard, .. ..	0	2	0
Do. of Florence, the yard, .. ..	1	0	0
Stuffs of all sorts, made of or mixed with wool, per yard,	1	5	0
Vallances of Scotland, the piece, .. ..	0	8	0
Worsted, called St. Omer, narrow half worsted, the piece,	1	0	0
Do. called Russells Worsted or Broad Worsted, the } piece, .. .. }	2	0	0
Yarne Camel or Mohair Yarne, the pound, .. ..	0	2	6
Grograine Yarne, the pound, .. ..	0	3	0

The next group is composed of English fabrics, and demonstrates that our worsteds exported were of a coarse quality. "Stuffs, perpetuanas, and serges" are only valued at one shilling and three-pence the pound weight, "in regard of the coarseness," and other stuffs at the small sum of one shilling and four-pence the pound weight. Although, as just mentioned, this value is no standard of their real or saleable price, and the custom was probably set low to encourage exportation, yet it may be reasonably concluded, that, so far as fineness is concerned, our worsted manufactures had at this date fallen and become deteriorated.

## MERCHANDISE OUTWARDS.—

	£	s.	d.
Bays—Barnstaple coarse, of 20lbs. weight, and under } the Bay, .. .. . }	0	12	6
Bays—Manchester or Barnstaple fine, and all other } single Bays not exceeding 34lbs. weight, the piece, }	1	0	0
Double Bays, the piece in weight from 34lbs. weight to } 60lbs. weight, .. .. . }	2	0	0
Minikin Bays, containing in weight from 60lbs. weight } to 90lbs. weight, to pay as 3 single Bayes, .. }	3	0	0
And if they contain above 90lbs. weight and not above } 112lbs., to pay all duties as for 4 single Bayes and no } more, .. .. . }	4	0	0
Fustians, of English making, of all sorts, to go free.			
Garters of Worsted, the gross containing 12 dozen, ..	0	2	6
Stockings Worsted, the dozen, .. .. .	0	12	4
Stuffs—Perpetuanoes and Serges, in regard to the } coarseness, the pound weight, .. .. . }	0	1	3
All other Stuffs made of Wool or mixed with Hair } or Thread, the pound weight, .. .. . }	0	1	4
Velures [ <i>sic</i> ] English, the single piece containing 7 yds.	0	10	0
Velures, the double piece containing 15 yards, .. ..	1	0	0
Worsted, Narrow English, the piece, .. .. .	0	15	0
Do. Broad English, the piece, .. .. .	1	0	0
Yarn, called Grograine Yarn, the pound, .. .. .	0	4	0
And for any other sort of Woollen Cloth of the Old or New Drapery, and not mentioned in this Book, to pay 2 farthings and $\frac{1}{2}$ a farthing for subsidy on every pound weight thereof.			

The legislature also re-enacted, by lawful authority, many of the measures of the Commonwealth, for the benefit of trade; and among others, that prohibiting the exportation of wool or woollen yarn from England or Ireland. This stands as the first act in the statute book, made for the express and general prohibition of the export of wool; and under it, the owners incurred a penalty, for every pound of wool exported, besides the master of the vessel freighting it being liable to imprisonment for three months. An exemption was however, made in favour of the Channel Islands, whither might be carried annually 105,600 pounds of wool, for the supply of the stocking trade, which had recently sprung up in that locality.\*

\* 12 Charles II., chap. 32.—This was the first *Statute* prohibiting, as above stated, the export of wool. Previously in many kings' reigns, from the time of

Also, very soon after the accession of Charles II., the ordinance of 1647, directing "how Norwich stuffs should be made and tried," was, with some additions and variations in substance, embodied in a long and wordy statute,\* which contrasts unfavourably with the concise ordinances of the Protectorate. The pith, however, of twenty-four sections is contained in the following epitome, in which it will be observed, that in the important parts, the wording of the 'Ordinance' is, to a great extent, followed. There is, indeed, this wide difference between the two records, that by the former, the presidents, wardens, and assistants, to be chosen, were constituted a corporation; but the latter does not confer on them that high position, nor is any mention at all made of presidents, and the number of assistants is reduced from forty to thirty. Of course, in the statute, the very existence of the 'Ordinance' is ignored.

The statute passed in the fourteenth year of Charles II., entitled—An act for regulating the making of stuffs in Norfolk and Norwich.

Recites, that divers abuses and deceits had of late years been used in the making of worsteds and other stuffs, commonly called Norwich stuffs, and in the reeling of yarns whereof the said stuffs are either wholly or in part made, which tends to the debasing of the said manufacture unto the prejudice of the public, which said trade of weaving of stuffs had of late times been very much increased, and *great variety of new sorts of stuffs have been invented*, so that the power given by the statute of the seventh of Edward IV., chapter 1, was not sufficient for regulating of the same. And that the number of wardens by the same act appointed being but eight, were too

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Edward III., the exportation of wool had, from time to time been prohibited, except by royal license, which was very liberally made use of, but now there was a general statutory prohibition in express terms. An exception was made in favour of the Channel Islands, whither it was allowed to export 3,300 tods of uncombed wool, each tod to contain thirty-two pounds. The stocking manufacture, which had now sprung up in these Islands, was, no doubt, the reason of this indulgence. Sundry penalties were inflicted for the exportation of wool, but still very much found its way into France, where the worsted manufacture could not be sustained without, and every stratagem was used to obtain this wool of England, long and soft in the staple. It indeed was now as necessary for the French worsted manufacture as it had formerly been for that of Flanders. The laws, prohibiting the export of wool, have never answered the end contemplated, for where there is demand and gain, the contraband trade will continue.—Macpherson, vol. 1, p. 481.

\* 14 Charles II., chap. 5.—It contains twenty-four sections, framed with great verbosity.



few for the governing and ordering the same trade, by which means the same manufacture would soon be lost (if not prevented), and carried into foreign nations, to the great diminution of his majesty's customs, and turning out of work many thousands of poor people.

It was therefore enacted, that there should be twelve wardens and thirty assistants, all which were to be master weavers within the county of the city of Norwich, and the county of Norfolk, six of which said wardens, and fifteen of the said assistants should be chosen at Pentecost yearly, by the master weavers of Norwich, and the remainder by the master weavers of the county of Norfolk.

Then follows provisions for swearing the said wardens to perform faithfully and honestly the office of warden of worsted weavers; and also for making bye-laws, rules, and ordinances, for the regulation of the "said worsted stuffs" and other stuffs then made, and which thereafter should be made within the city of Norwich, and county of Norfolk, both in length, breadth, and goodness; and empowering the said wardens to make seals from time to time for sealing of the same stuffs. And the said wardens and assistants were also authorised to fine any person or persons who did not conform to the said rules, &c.

And it was enacted that all yarns called worsted yarns, and such other yarns as were commonly used by the worsted weavers should be made without fraud, and reeled on a reel of a full yard about, and every reel staff should contain fourteen leas, and every lea forty threads; twelve of which reel staffs should make a dozen, and twelve of those dozens make a gross. And in case any person or persons should sell or expose to sale any of the said yarns, made and reeled in any other manner than aforesaid, that then every such person or persons should forfeit the moiety of the value of the said yarns to the use of the said trade and manufacture. That the said wardens and assistants should search in all fairs and markets, and other public places of sale of yarns within the said city of Norwich, and county of Norfolk, all yarns which should be there exposed for sale, and to seize such as should be found defective.

That all sorts of stuffs whether woven of woollen only, or of wools and other materials within the city of Norwich, and county of Norfolk, and the makers and the weavers of the same stuffs should be under the power, government, and regulation of the said wardens and assistants, (except such stuffs as were under the regulation of the warden and fellowship of the mystery of russell sattins, sattins reverses, and fustians of Norwich making, within the city of Norwich). And that all stuffs made or to be made under the regulation aforesaid, before the same should be offered or put to sale, should be brought to *Weavers' Hall*, in the city of Norwich, to be there viewed and searched by the said wardens, or any two of them. And if the same were found to be well and sufficiently made, then the same should, by the said wardens, be sealed, and allowed accordingly, without any sum of money to be paid for the same—but if found defective, then a fine to be imposed not exceeding one half of the value of the defective cloth.

Then follow provisions for punishing misbehaviour of wardens, &c.

Although there is great similarity between the clauses here printed, and those of the ordinance, still, there are some verbal differences sufficiently important to warrant the reprint. Allusion is here, for the first time, in any document

inspected for this work, made to *Weavers' Hall*, which, it is very probable, had been built since the year 1647; because, in the ordinance of that year, the existence of such a place is not noticed; on the contrary, the defective pieces were directed to be conveyed to the Corporation Hall.

At last, it may be presumed, effective provisions were devised, for preventing frauds in Norwich fabrics. It had notwithstanding, been often gravely discussed, whether it would not be for the welfare of England to grant the manufacturers the liberty of making what kind of cloths and stuffs they pleased, without being subject to the aulnagers or officers appointed to search and certify that they were of proper lengths, breadth, and goodness. A most able writer on commerce and finance, Sir Josiah Child,\* held the opinion, that such liberty would be beneficial, "except as to those species only, as his majesty and parliament shall think fit to make staples; as suppose Colchester bayes, perpetuanoes, cheanyes, and some other sorts of Norwich stuffs, to be allowed the honour of a public seal, by which to be bought and sold here, and beyond seas, as if it were upon the public faith of England; and wherever such seal is affixed to any commodity, I would desire the commodity should be exactly made according to the institution, and always kept to its certain length, breadth, and goodness." This passage reveals, that, these Norwich stuffs were of exceeding importance, and worthy of great care in keeping them from deterioration. What these 'cheanyes' were, is not easily answered. Did they obtain their name, from being a variety of goods, expressly made for the trade in China, and other parts of the East? Perpetuana had certainly become a worsted fabric of very extensive make, both for the home and foreign trade. In Nares's Glossary, it is defined, "a sort of stuff; by its name it should be something like everlasting."†

\* Sir Josiah Child, "Of wool and woollen manufacture." He observes, "that wool is eminently the foundation of the English riches, I have not heard it denied by any, and therefore all possible means should be used to keep it within our own kingdom, is generally confessed."

† The word 'Duraforte,' Florio, in his Italian Vocabulary, printed in 1599, defines to be "strong, enduring, lasting: also, the stuff perpetuana." This may imply, that it was an Italian name, signifying 'lasting.'



But whatever notions were held by others, respecting the advantages to be derived from searching and sealing woollens and worsteds, the corporation of London were zealously bent on strictly enforcing such offices on all sales of these goods in the city. And here may be noticed, though not altogether in chronological sequence, an order passed at a meeting of the common council, held in 1678, for “regulating the sale of cloths and stuffs in London.” The ensuing contains the two important paragraphs, in this order, which is printed in ‘Stow’s London’, and occupies ten folio pages.\*

That all Essex and Suffolk cloths, and all cloths commonly called Coventry cloths, Hampshire and Surrey kerseys, and all sorts of Suffolk and Essex flaniens, bayes, perpetuanes, rashes, serges, and sayes, and all other commodities that go under the name of the new drapery, made or mixed with wool, worsted, jersey, or cruel, or with cotton wool, or either or any of them, brought, or which shall be brought to the city of London or liberties thereof, either by land or water, (except Norwich and Canterbury stuffs), be brought unto, pitched, and harboured in Leaden Hall, there to remain till they be entered, and the duties of hallage hereinafter mentioned, paid, or agreed, and secured to be paid for the same; which entry of the said cloths, or other woollen manufactures, brought or to be brought, as aforesaid, to the said hall, shall be immediately made, after such bringing the said commodities to the said hall, upon pain that every person that shall offend herein, shall forfeit for his first offence the sum of fifty shillings, &c. Which cloth or cloths and other woollen manufactures, or any of them, shall not from thence be removed to any other place out of this city, or liberties thereof, till after the three first market days of their being brought to the said market, unless sold in the meantime, or removed and carried to be sold in any other market without the liberties of this city.

And it is hereby enacted and declared, that all sorts of broad and narrow cloths, by what name soever called, distinguished, or known, in what place soever made, and all other kerseys, bayes, tammies, sayes, rashes, perpetuanes, serges, rugs, blankets, motleys, of what sort or nature soever, pennystones, half-thicks, plains, frizes, cottons, linsey-woolseys, stockins of all sorts, carpetings, and hangings of all sorts, fustians of all sorts, and all other commodities and manufactures made or mixed with wool, worsted, jersey, or cruel, or with cotton wool, or either or any of them, brought or which shall be brought to the city of London, and liberties thereof be brought unto, pitched, and harboured in the Blackwell Hall, or the Welch Hall, or one of them, &c., &c., [to the same effect as the former clause.]

Another paragraph affirms:—“That all these duties of hallage are to be from time to time employed for and towards the maintenance of the poor children harboured in *Christ’s Hospital*.”

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\* This order recites, that, by ancient customs and usages, within the city of London, all cloths and stuffs made or wrought within the kingdom of England, and brought to the city for sale, had, or ought to have been brought to Blackwell Hall, Leaden Hall, or Welch Hall, to be searched and sold. It is also ordered, that no persons, free or not free of the city, should buy or barter the said cloths or stuffs, except at these halls.



For what reason it was considered desirable thus to class worsteds under two divisions—namely, those made at Norwich and Canterbury, under one, and those made elsewhere, under another—it is now vain to attempt the discovery. Coventry made tammies, and Colchester,\* Sudbury, and other places in Essex and Suffolk had become seats for the manufacture of some of the species of worsteds; but, what (if any thing) constituted the distinction between these and the other stuffs cannot, it is presumed, be accurately answered.

Many localities in the West of England, had also grown very famous for the making of worsted goods, especially Exeter, where the manufacture (chiefly of serges) greatly flourished, and the city became (like Norwich,) the resort of very numerous stuff merchants, who, to the great benefit of the manufacturers, bought up their productions, and exported them abroad; but this business was now interfered with by the Merchant Adventurers, who again obtained a confirmation of their former charter, and under it, claimed to have the sole right to export these articles into Germany, &c. This interference occasioned much contention, and at length the merchants of Exeter presented a petition to Parliament, for the redress of their grievances, in which they complained, that the conferring of the whole of the trade of the manufactures of wool, sent to Germany and the Netherlands, upon one company, was exceedingly detrimental to the merchants in general, and also to the national welfare. That, after the date of the two resolutions of the House of Commons, in 1624, granting liberty to all merchants, as well Merchant Adventurers as others, to export dozens, kersies, *new manufactures*, white and coloured cloth, into Germany and the Netherlands, the English trade increased very much, and the Dutch fell off in proportion. But since the Merchant Adventurers had again obtained the sole right to export these articles, the Dutch manufacture

\* As evidence of the growing importance of Colchester in the manufacture of bays and says, an Act of Parliament was, in the year 1660, passed, directing all bays and says made in the town to be searched and marked at the Dutch Bay Hall, before they were exposed for sale. A Dutch colony of worsted weavers settled at Colchester in the time of Elizabeth. Strutt, vol. 2, p. 192.

had vastly increased, and the English trade in a corresponding degree run off, and very many of our best manufacturers had settled in Holland. That, by the restraints put upon them, the manufacturers of Exeter had, particularly within the last six or eight months, suffered in their trade for cloths and stuffs, because the Merchant Adventurers did not ship from Exeter the tenth part of those articles which had been shipped by the other merchants; that, from June 24th, 1661, till September 29th then following, they had bought and transported of serges, broad cloths, kersies, Devonshire dozens, bays, 225 pieces and no more; whereas, five or six Exeter merchants had, in the same time, transported of the same goods into the Low Countries, 9254 pieces; and from September 21st, 1661, for three months then next following, the Merchant Adventurers had bought and transported from Exeter, only 370 pieces of such manufactures, and through the interference of the company, the Exeter merchants only transported 4721 pieces—fewer nearly by one half than in the preceding quarter. To this petition from Exeter, the Merchant Adventurers framed a reply, and submitted it to Parliament, in which they declared, that the reason of their not purchasing woollens and worsteds more freely, solely arose from the want of vent for them abroad, so that of the last year's shipping, they had lying in their warehouses at Hamburgh, (which had now become their grand continental depot,) not less than 14,000 *stuffs unsold*, besides all other cloths and woollen manufactures, to the amount of near 30,000 cloths.\* Nothing can be more conclusive than this statement, that, the Dutch and other continental nations had vastly increased their own manufactures, so as to supplant to a large amount, the woollens and worsteds formerly supplied by us.

This supplanting of our trade, was manifestly, in a large degree, also owing to competition by the weavers of France. Incessant complaints are made in the publications of this

\* Set out in Smith's *Memoirs of Wool*, vol. 1, p. 204, and also in Macpherson, vol. 2, p. 499.

period, that the worsted manufactures of that country seriously affected the prosperity of our own. Ever since the days of Henry IV., under the encouragement afforded by Richelieu, Colbert, and other of her statesmen, the textile arts of France had spread and flourished to a marvellous extent. The author of a pamphlet, printed now about,\* in dolorous strain, laments the decay of the English woollen and worsted branches, and the increase of the French ones. He states that they had grown to great repute among us, and that we exported, from that country, merchandise to no less an amount than £2,600,000, among which he enumerates silks, stuffs, and other fine draperies to the amount of £600,000, whilst the whole of the English commodities imported into France, consisting chiefly of woollen cloth, serges, knit stockings, lead, &c., did not amount to £1,000,000; thus exhibiting a clear loss to the kingdom of £1,600,000. The French, to encourage their own productions, laid an impost of fifty or sixty per cent upon our drapery, constituting an almost express prohibition. Another pamphlet entitled “England’s Interest by Trade asserted,”† printed in 1671, contains many interesting particulars respecting the contraband trade carried on by the French in our combing wools, and the evils resulting therefrom. Take for instance this passage which supplies many curious details:—

“Every pack of wool sent to France doth prevent us not only of the benefit of the manufacture thereof, but of two packs more besides itself, viz. thus: it being combing and combed wool for the most part exported thither. The French, having no wools of their own, but such as are very coarse, are not able to make cloth or fine stuffs without the conjunction of ours therewithal, there being none (to my best information) in all the world fit for that purpose, but ours only, except in North Holland, and that a small quantity of fine worsted wool; all others being likewise coarse, but Spanish wool, and that much too fine, especially for worsted stuffs, and not in any wise fit for combing; so that without English or Irish wools, there can be no quantity of fine worsted stuffs, nor a middle sort of cloth made in the

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\* “England’s Interest considered, in the Increase of the trade of this kingdom, “by Samuel Fortrey.” Published in 1663.

† The initials of the writer are only given, “by W. C., a servant to his king and country.”



world. Wherefore, the exportation of the English wools into France must of necessity be prejudicial to this nation, not only in the quantity sent over, but also in the advantage which is thereby given to them to manufacture a double portion of their wool (which was formerly of little worth) into such commodities as spoils us of the advantages of our proper trade, not only thither, but also into other parts. Now if we consider this, the damage of exporting one pack from England to France, at about £10 or £12 sterling, preventing the manufacturing of two packs more in England, which would be worth £100, England's loss in the whole, by the exportation of one pack of wool, can be little less than £90, it being generally combing wool that is exported to France, which makes worsted stuffs and stockings. And besides the advantage given them (as above asserted) by one pack of rough wool, it is obvious to all manufacturers, that a pack of worsted or combed wool, worth £20, at twelve score to the pack, which is 20d., per pound, and to make more easy to every ordinary capacity, that in stockings, a pound of fine wool would make at least two pair of hose, worth 5s. a pair, that is 10s. per pound of wool, or reckon thus, to ordinary hose, three pair to a pound of wool at 3s. 4d., per pair, come to the same sum, and twelve score pounds of wool making a pack, so many pence for the pound of wool, so many pounds for the pack, and a pack of wool making four hundred and eighty pair of hose, which twelve score angels being cast up, is £120, without any respect to the advantage given them in rough wool, as before asserted."

The author, who is evidently well-informed on the subject, and seems to have been employed to prevent the smuggling of our wool, gives, as one of the inducements to this illicit practice, the high duty imposed at the Custom House upon the export of worsted goods, namely £5 a pack.

To counteract, in some measure, the injurious effects to our textile occupations arising from the importation of French commodities, the legislature directed that no person should be buried in any woven material except made of wool, thereby intending to prevent the custom of using French linen and lace for the purpose, which at this period was much in vogue, and carried to a profuse length in burials. By virtue of this prohibition, the use of fine worsteds, stuffs, and flannels, became common for wrapping the dead; and, as a vestige of the ancient practice, remains in some districts to the present time. Some impulse, without doubt, was given to the worsted trade by this petty discouragement of French articles; but the evil, in its magnitude, remained much the same. At length Parliament, after long forbearance, attending to the loud and incessant complaints of the nation, altogether prohibited, in the early part of the year 1678, the importation

into England of all French merchandise whatsoever. Immediately our manufactures from wool began to amplify and prosper to an amazing extent, so much so, that a great authority asserts, that in 1681—"Such a trade there is and "hath been for the woollen manufacture, [including worsteds,] "as England never knew in any age."\* This statement, though not literally correct, proves that our staple industry had received a great impulse. Besides, a little later, events transpired to weaken the manufacturing energy of France, whilst that of England increased. Guided by injudicious councils, Louis XIV. determined to revoke the Edict of Nantes, thereby depriving his protestant subjects, comprising the most laborious portion of the population, of their rights and privileges. Immense numbers quitted France, carrying with them their wealth and industry. They were, undoubtedly, the most affluent, enterprising, and industrious merchants, manufacturers, and artisans of that kingdom, and their departure inflicted irreparable injury on its commerce, trade, and prosperity. England was again destined to reap a profit from the religious troubles of other nations. Great benefit accrued to this country from this expatriation of French protestants, who were exceedingly skilled in the weaving of light and fancy stuffs, especially very fine worsteds and crapes, and also in serges, heavy stuffs, druggets, and the coarser draperies. It is estimated that upwards of 70,000 of these foreigners settled in England and Ireland, very much improving and augmenting the worsted draperies, especially in light tissues.† The richer sort of the emigrants settled in England and Holland, and even yet their descendants are well known, and comprise a large and influential portion of our population. They introduced here very many new methods and improvements in the textile arts, and added greatly to our increase and importance as a manufacturing

\* "The East India Trade the most National," by Sir Josiah Child, 1681.

† Weiss' History of French Protestant Refugees. He observes, also,—“the “English are indebted to them for the introduction of a variety of new manufactures.”



nation.\* Previous to the revocation of the Edict of Nantes, shalloons, tammies, and other light stuffs were exported hither from Picardy and Champagne, in France, to the amount of £150,000, but that trade either wholly or to a great extent ceased.

The reception which these refugees met with, from the populace of Norwich, resembled the inhospitable nay brutal treatment always allotted to foreign artisans settling in that city, however beneficial either immediately or eventually their presence, in restoring, or promoting its welfare. On the first indication of these persecutions in France, many of the protestants took shelter in Norwich, when the citizens “attacked them in their houses, and would have driven them “from Norwich, but for the interference of the trained “bands.”† Afterwards upon the revocation of the Edict of Nantes, the great tide of French emigration setting in, the hostility betrayed by the inhabitants of Norwich to the strangers, prevented the city from deriving the full benefit of that event. Nevertheless many settled there, and established some new species of manufacturēs from wool, and improved several of the staple ones, especially those made with an admixture of silk, and gave a vigorous impulse to the prosperity of Norwich, which was felt henceforward to the close of the last century. Not least of the numerous improvements imparted to us by these refugees, were those in the art of dyeing, in which they were expert.‡ They also introduced into Norwich the manufacture of crapes, afterwards destined to improve so much its trade. De Foe, in his *Review*, December 30th, 1704, observes,—“The first effort of the “French refugees was our *thin black crapes*, a manufacture

\* Voltaire, in his “Age of Louis XIV.,” remarks, “Nearly 50,000 families “left France in the space of three years, and these were afterwards followed by “others, who introduced their arts, manufactures, and riches, amongst strangers.”

† Blakeley’s “Manufactures of Norwich,” p. 16.

‡ It has before been noticed, that the use of logwood had in the time of Elizabeth been prohibited, and again in the days of James the I., and Charles; but by degrees the proper use of it had been learnt, and therefore, in this reign, the laws promulgated against logwood were abrogated. In the preamble, to the Act



“purely their own, and I refer to the memory of persons conversant in trade, how universally it pleased our people; so that the least quantity of wool that ever was heard of in a garment supplying the room of a suit of cloth, it became a general habit, and the ladies of the best quality began to appear in a gown and petticoat under twenty-five shillings, till the meanness of the price giving every servant an opportunity to be as fine as her mistress, it grew a little obsolete among the women, then the men fell into it.”

These additions to our worsted fabrics, by opening a new demand, were of much moment, and answered as an equivalent to the loss from another source. So extensive had the importation of East India chintzes and calicoes become, for bed and window hangings, and other furniture, and also for dress, that the use of worsted stuffs for the like purposes had much diminished, and the makers were exceedingly alarmed lest these productions of the East should altogether ruin their trade. In this outcry, the growers of wool and those interested in the price of land, joined; and vigorous attempts were made to stop the importation or home weaving of cotton goods. Frequent and angry debates thereon occurred in Parliament; from a speech in one of these debates, the following is extracted. “It is well known what advantage redounds to the nation by the consumption of our manufactures abroad and at home; and how our forefathers have always discouraged such trades as tended to the hindrance thereof. By the best computation that can be made, we now spend in this kingdom, per

13 & 14 Charles II., chap. 11, it is recited, that the ingenious “industry of these times taught the dyers of England the art of dyeing with logwood, and fixing the colours thereby made, so that by experience they are found as lasting, and serviceable, as if they had been dyed with any other kind of dyeing wood.” Before this period, it had been enacted, by what was called the ‘Navigation Act,’ that no indigo, fustic, or cam, or any other dyeing wood, should be transported from our Asian, African, or American colonies, to be shipped to any other place except England or Ireland, thus shewing that the art and improvement of dyeing had become of very paramount importance, and that it was considered exceedingly desirable to obtain a monopoly or first privilege in dyeing. It is also highly probable that our textile manufactures had so much increased, that there was an exceeding scarcity of dyeing articles to colour them, and that this very peremptory law was promulgated to encourage our domestic trade.

“annum, to the value of £200,000 or £300,000 worth of  
 “goods manufactured in the East Indies. What part thereof  
 “are spent instead of our stuffs, serges, cheneyes, and other  
 “goods, I leave to every man’s judgment that hath observed  
 “how their Persian silks, Bengals, printed and painted cali-  
 “coes, and other sorts, are used for beds, hangings of rooms,  
 “and vestments of all sorts.”\*

Nor were the pamphleteers of the day idle. One of them after laying down several rules whereby he judged the woollen trade would be restored and preserved, and lamenting the injury occasioned by the prevailing use of calico, proceeds to show in particular instances the damage done. “Instead  
 “of *green sey*, that was wont to be used for children’s frocks,  
 “is now used painted and India stained and striped calicoes,  
 “and instead of a *perpetuano* or *shalloon* to line men’s coats  
 “with, is used sometimes a glazed calico which in the whole  
 “is not above twelve shillings cheaper, and abundantly  
 “worse.”† Thus it is apparent that calicoes were now extensively used to line clothes, and the particular worsteds so supplanted are denoted. The main object of the above noticed debate was to get rid of the charter of the East India Company, who, notwithstanding the purchase of large cargoes of stuffs, by their import of calicoes hither and to the rest of Europe, more than counterbalanced the benefit of such purchase. It was likewise alleged to be extremely unfair, that calicoes woven by workmen in India at one penny per day, with materials cheap and on the spot, should be brought into competition with worsteds, the weavers whereof were paid one shilling a day, besides the dearness of wool.‡

On taking a retrospect of the times of Charles II., it must be admitted that with all the drawbacks from foreign competition, and the negligence evinced by the government to the true interests of the nation, the worsted, and indeed all the clothing departments improved, while he occupied the throne ;

\* Smith’s *Memoirs of Wool*, vol. 1, p. 351.

† “The Ancient Trades decayed, repaired again, &c., by a Country Tradesman, 1678.”

‡ Speech of Mr. John Basset in the Debates in Parliament, 9th Novem., 1680.

as did also the general commerce and prosperity of the country. The whole of the exports of the kingdom in 1662, amounted to only £2,022,812, whilst the imports attained to £4,016,019, leaving a balance against us of nearly two millions.\* Six years later, (1668), the exports and imports bore about the same proportion; the former being in value not more than £2,063,274, and the latter £4,196,139, leaving the balance much the same as in 1662.† It is estimated that of the exports in either of these years, the woollen and worsted portion did not exceed £900,000.‡ In the year 1668, we shipped to France of our woollen, worsted, and silk manufacture to the value of only £84,621, while the linen and silk imported thence into England were valued at £1,136,150.§ For the last fifteen years of the rule of Charles II., and especially after the prohibition of French commodities in 1678, the demand for worsted stuffs had at home rapidly and largely extended.|| Although our commerce to the north of Europe, carried on through the Eastland Company, had suffered much from the rivalry of the Dutch, and also a little from the Scotch,¶ who now, for the first time, began to export wool tissues, yet within the last thirty years our trade to Spain and Portugal, (of which worsteds of various sorts constituted a large item), had nearly doubled; and it may be averred, with

\* British Merchant, edited by Charles King, vol. 2, p. 334.

† Ibid.

‡ Smith's Memoirs of Wool, vol. 2, p. 42.

§ British Merchant, vol. 1, p. 181.

|| So also had the general Commerce of the Nation. This is remarkably exhibited by Dr. Davenant, who, from his position as Inspector General of the Customs, was well able to form an accurate judgment on the subject. He asserts that, in 1666, the farm of the Customs of England was only £390,000, but that for the last fifteen years of this reign, it averaged about £500,000, shewing a very large foreign traffic.

¶ Ever since the year 1580 much care had been taken in Scotland to cultivate manufactures from wool, and henceforward many Scottish Acts of Parliament and Council were made to promote this object. In a former page, (p. 53,) a sumptuary law, passed in 1621, is noticed, prohibiting all Scottish subjects from wearing any woollen cloths or stuffs, except of the national manufacture. About the same time two Acts of Parliament were passed in Scotland, prohibiting the export of wool, and no licenses for the purpose were to be granted. These are evidences that the Scots had already begun to work up into clothing materials the whole of their



certainly, that on the death of Charles II., our export transactions in stuffs were in a thriving condition, whilst the home consumption had also, owing to many causes, greatly increased. Unlike the austere habits which prevailed during the Commonwealth, luxury in dress pervaded all classes soon after the Restoration. An eminent writer of this age, Sir Josiah Child, in one of his judicious works adverting to this topic, remarks, that formerly “gentlewomen esteemed themselves “well clothed in a *serge* gown, which a chambermaid would “now be ashamed to be seen in.”\* After the bar to the importation of French finery, this love of variety and beauty in dress conduced very greatly to the benefit of our textile industry, and occasioned a large and quick home demand for articles of clothing. Likewise the price of our wool advanced, having fluctuated much from 1660 to 1678. In the former year, it reached sixteen-pence and eighteen-pence in the pound; in 1667 and 1678, it had fallen so low as to be worth only five-pence and six-pence per pound. This was probably, in the main, owing to the legislative prohibition of the export of wool, which gave the home consumer, notwithstanding the extensive contraband trade therein, somewhat of a monopoly; but after the exclusion of French goods, wool increased in price, being in larger request. Sir Josiah Child affirms, that in 1681 it had increased fifty per cent. of its former rate.†

wool. In the days of Charles II., the worsted manufacture there began to flourish. Among others, they manufactured what were termed Stirling serges, (a finer kind than had been made in Scotland formerly,) where, observes a Scottish writer in 1683, “one pound of our own wool, (not worth 8s. *Scots* the troy pound) [that is “8d. sterling,] shall yield two elns of serge, or thereabouts, which when dyed and “dressed in cloth colours, is sold here in retail with profit, for 24s. the eln, and “within these eight years were wholly imported from England, and cost there, “albeit not finer than this, always 2s. 2d. and 2s. 4d. sterling the yard.” And he then proceeds to affirm, that these serges were exported in large quantities to Holland, Hamburg, Spain, the West Indies, and other places. He also adds, that of late years, mixed serges, cloth serges, and those called in France *serge de Nismes*, had been made as fine as those ordinarily produced in England or France.—Quoted in Smith’s *Memoirs of Wool*, vol. 1, page 368.

\* “Brief Observations concerning Trade and Interest of Money.”

† Smith’s *Memoirs of Wool*, vol. 2, p. 508, *et seq.* :

Foremost, in the baneful administration of James II. respecting trade, stands the measure for repealing the salutary prohibition of French commodities. Their interdiction by the previous Parliament, had occasioned incalculable damage to the clothing concerns of our neighbours. Hence the solicitude of the French king, to remove the barriers which prevented the ingress into this country, of his subjects' handicraft productions, and by holding out to the bigoted James promises of assistance in the introduction of his contemplated innovations, the prohibition was, for the term of three years, nullified,\* at the sacrifice of the best and most vital interests of England, though not without meeting strenuous opposition from the wool growers. To obviate, in some degree, their dissatisfaction, the House of Commons appointed a Committee, to consider on the best means of keeping up the price of wool; and for that end, it was resolved, that all persons should be compelled to wear woollen manufactures six months in the year.†

During these three years, the French put forth every effort to improve the opportunity they now possessed of supplying England with their fabrics, and to stimulate to the utmost the enterprise and industry of his manufacturing subjects, Louis, relaxing his commercial code, granted to them many immunities; and so successful were they in stocking this country with their wares and products, that in three years no less than four millions sterling, in value, found vent in England.‡

Fortunately James held his ill-used power for a brief period, else the injury which would have accrued to the national trade and prosperity might have been irreparable. But the Revolution of 1688 transformed the aspect of affairs, and at once effectually banished from our shores French importations. The legislature, in the act prohibiting all trade and commerce with France, declared very truly, that the bringing

\* 1 James II., chap. 6.—“ Act for repealing the Prohibition of French Commodities.”

† Smith's *Memoirs of Wool*, vol. 1, page 378.

‡ Macpherson's *Annals of Commerce*, vol. 2, page 620.

in of such merchandise had "much exhausted the treasure of  
"the nation, and lessened greatly the value of the native  
"commodities and manufactures thereof."\*

Estimated by its mighty effect on the national progress and permanent welfare, the world never witnessed a Revolution so noiseless or costless as that of 1688. Here there was no political earthquake, by its upheavings of society, overturning the institutions of the country, disturbing the channels and course of trade, and suddenly interrupting the avocations of the commercial classes. The change, though wonderful and extensive, establishing upon the surest basis the freedom of Parliament and the liberty of the subject, disenthraling the constitution, stimulating the general investment of capital in manufactures and commerce, and inducing the nation, by pledges of security, to embark with unreserved energy in mercantile pursuits, was, in England, effected without tumult or bloodshed. Henceforward the system of truckling to France at the expense of our own industry was abandoned, and the true interests of the state, bound up indissolubly with the trading classes, were better understood and appreciated. True the structure and combinations of society did not permit of a very liberal policy in relation to commercial affairs: the advent of Free Trade loomed in the very far distance, and even its commonest bearings could only be understood by the few who were in advance of the monopolies, restrictions, and prejudices of the age.

Deposited among the Lansdowne MSS.,† there is a highly valuable "Account of what woollen manufactures were made, "exported, and consumed from the 25th of December, 1687, "to the 25th of December, 1688," seemingly prepared from official information. It has appended to it several notes, which explain some particulars and modify others, and has indorsed in another hand apparently official, "Received "March 27th, 1695, from Mr. Blofield, who said that he and "the town of Norwich, had with great charge obtained this

\* 1 William & Mary, chap. 34.

† Lansdowne M.S., British Museum, No. 846, f. 284.



“from the officers of the Aulnage and others.” Taken in conjunction with these notes, this account contains, it may be conceived, the nearest approximation to the exact quantity of English manufactures from wool made at this time that can be obtained.

	Total made.	Exported.	Consumed at home.
Serges, Perpetuantes, Sayes, and Stuffles, } (Norwich Stuffles excepted) .. }	682,200	390,000	292,200
Kerseys, Single Dozens, Pennistones, } Single Bayes, Devon, Dunstable, and } Dorsetts, Spanish Cloths, Short Cloths, } Double Dozens .. .. }	266,686	88,210	178,476
That are under the denomination of Short } Cloths .. .. }	111,150	21,392	89,758
Long Cloths .. ..	48,260	29,943	18,317
Minikin Bays .. ..	9,600	5,660	3,940
Colchester Bays and Double Bays ..	86,000	35,565	50,435
Total ..	<u>1,203,896</u>	<u>570,770</u>	<u>633,126</u>

Besides Crapes, Camblets, Norwich Stuffles, and many other Commodities, of which few or none are exported.

Then follow these notes—

That this account above written was given by the Aulnagers when the bill for transferring the Aulnage duty to the Custom-house was depending, on purpose to demonstrate that the exportation was less than the home consumption; thereby to hinder the passing that bill, and no doubt that above one-fourth part was calculated as much in favour of their design as could be.

That in the account above, it is set forth that of crapes, camblets, Norwich stuffles, &c., few or none are exported, whereas it is generally computed that above one-fourth part of the said manufactures are exported.

That by an account formerly delivered by the Aulnagers it was made appear that the home consumption was much less than the exportation, and by this account the exportation doth not very much exceed the home consumption.

That by the judgment of a great many intelligent merchants and others, that have strictly inquired into the course of trade, it is computed, that the exportation is greater than the home consumption, but it must be allowed that none can give so true an account thereof as the persons concerned in the Aulnage farm.

That by a computation made of the value of woollen manufacture yearly exported, taking the mean portion for twenty years last past, it doth not exceed two millions of pounds sterling, and supposing the home consumption to be as much as the exportation, it then follows that the duty of ten per cent. would bring in yearly not above £200,000, out of which, allowing the charges in collecting, which would

be very considerable, and allowing also present Custom and Aulnage to be taken off, which amounts to about £50,000 per annum, and £150,000 given as bounty money as was proposed, then the duty of £10 per cent. instead of raising money to supply the government, would draw money therefrom, to answer the balance of the account.

Hence we gather that of serges, perpetuanoes, says, and stuffs, (Norwich stuffs excepted) no fewer than 682,200 pieces were woven, and although nearly three-fifths were exported yet the home consumption formed a very large portion. It is to be regretted that no account is given of the number of crapes, camblets, and Norwich stuffs made, but whatever that amount, one-fourth, according to trustworthy computation, was shipped abroad. Norwich crape had now become a very fashionable material for garments, and the making of it an important item of the worsted trade. Attention may also be profitably directed to a comparison between the number of pieces of worsted made and exported (even so far only as the sorts above specified) and those strictly consisting of woollen; and after making due allowance for the much greater value of cloths per piece, sufficient evidence is adduced of the great importance, even when compared with our long famed woollen cloth branch, of the worsted trade. It was estimated by many writers of authority, as will hereafter more largely be alluded to, that at the close of this century the value of manufactures from wool exported, amounted to two millions sterling, and if the home consumption be fixed at the same amount the whole would stand at four millions. The above account affords some data whereby an idea, however faint, may be obtained of the relative value of worsteds made in England.

After the terrible blow inflicted by Cromwell upon Ireland its woven productions from wool declined, and the material had either been sent hither, or ‘run’ abroad.\* It was indeed

\* It has in a preceding page (p. 63) been shown that worsted manufactures flourished in Ireland at an early period, but after the usurpation they long remained dormant. They must, however, have rapidly progressed of late years, to be of such importance in 1798; for the author of a pamphlet, issued in the year 1677,—“A letter from a gentleman in Ireland to his brother in England relating to the concerns of Ireland in matters of trade,”—writes, “And here it may not be

the settled policy of England to foster in the sister island the growth of the linen manufacture, but to discourage, by every artifice, that from wool, in which we anxiously desired a monopoly, and looked with disfavour upon competition on that ground from whatever quarter it proceeded. Of late years the woollen and worsted occupations of Ireland and our colonies, having, however, been slowly but surely growing, had attained an importance which exceedingly alarmed the English weavers. A large portion of the wool produced in Ireland was worked up there in woollens and worsteds, which (as well as those made in our American colonies) so rapidly increased as to trench to an alarming extent upon

“amiss to inform you, something better than I perceive you are at present, concerning the state of our manufacture in Ireland; not so much because in itself grown so considerable, that it deserves mention, (for of all virtues industry is the one of which you will have cause to accuse us,) as by reason it hath of late made a great noise with you, as things usually do that are the most empty.” He then mentions, that ten or twelve years before, some Englishmen erected a manufactory at Dublin, which was increasing daily. That about the same time some sixty families from Holland set up another at Limerick, which by reason of the late wars had fallen into decadence. That after, more English came and fixed about Cork and Kinsale, “where, (adds he) they continue and are grown not inconsiderable. “Some French had “since resorted to Waterford to make druggets “there, and other commodities of their fashion.” “And about a year or two ago “some Merchants of London raised another manufactory at Clonmel, managing “it by their agents.” “Also that some small attempts of the like nature may be “met with here and there in the counties, but not worth speaking of.” An immense growth of wool is on all hands admitted to have been produced in Ireland. Sir William Petty, in his *Political Anatomy of Ireland*, (1672,) sets down the Irish sheep at four millions, and estimates the fleece at two pounds weight; of this quantity two millions was usually exported, the remainder being used in the home manufacture, which was nearly altogether a domestic one, each family fabricating the materials for its own clothes. After this the number of sheep was increased very much, and Ireland almost converted into an immense sheep walk, to the great discontent of the peasantry, who were evicted from their small holdings to effect the requisite clearance. That the quantity exported much increased is apparent. In 1687, when the Irish manufacture was at the highest, there was imported thence to England 292,792 stones of wool and yarn, at 16lbs. to the stone: also, in 1697, when the manufacture of that kingdom was, after the Irish war, again great, 260,052 stones; from 1700 to 1703 at a medium 361,491 stones.— See *Smith's Memoirs of Wool*, vol. 1, p. 245. It is evident from the numerous Pamphlets issued on this subject at this period, that the Irish worsted manufacture was very flourishing, and that they exported a large number of pieces



our own, and even compete with us in some branches, in the continental markets. To crush these competitors the English Parliament caused a Bill to be brought into their House, reciting, “that wool and woollen manufactures, cloth, serge, “bays, kerseys, and other *stuffs*, made or mixed with wool, “are the greatest and most profitable commodities of this “kingdom, on which the value of lands and the trade of the “nation do chiefly depend; and that great quantities of the “like manufactures have of late been made and are daily “increasing in the kingdom of Ireland, and in the English “plantations in America, and are exported thence to foreign “markets heretofore supplied from England, and which will “inevitably sink the value of lands and tend to the ruin of “the trade of the woollen manufactures of the realm.” Provisions were then framed for preventing the export from Ireland, or the plantations of America, of any wool, woolfels, shortlings, mortlings, woolflocks, worsted, bay or woollen yarn, cloth, serge, bays, kersies, says, friezes, druggets, cloth serges, shalloons or any other drapery, stuffs or woollen manufactures whatsoever made up or mixed with wool or woolflocks, *except to England*, under penalty of being forfeited and the offender being likewise mulcted in £500, and the vessel freighting the same to be forfeited. Besides all persons in any manner aiding in the export to be fined £40.\*

It is plain from many contemporary authorities, that Ireland, which produced large quantities of long wool, principally competed with us in the production of worsteds, among which may be numbered shalloons. An author writing at this period on the subject, after alluding to the Irish to a great extent working up their wool, proceeds, “their contest indeed now “is only in relation to what we call new drapery, consisting “of bays, serges, and stuffs, *which makes up a mighty part of “our exportations*, and the injury they will come to do us “therein cannot be less than what I have before noted; to “which I might add, that Ireland affords us great quantities “of that sort we call long wool for combing of which those

\* 10 & 11 William III., chap. 10.

“goods are made, and if they shall work it up themselves  
 “the wanting of that supply will be very sensible to us.”\*  
 He then contends that the Irish could produce worsteds at a lower price than the English. His estimate of the cost of producing a piece of serge in each country, supplies some valuable information as to the rate of wages and price of wool, with other particulars relative to the trade.

	Cost in England. £ s. d.	Cost in Ireland. £ s. d.
A piece of Serge of about 40s. price, takes up } 24lbs. of Wool, at 9d. per lb. in England, and } 6d. per lb. in Ireland .. .. . }	0 18 0	0 12 0
These 24lbs. of Wool when combed, make 15lbs. } for the Spinner, at 9d. per lb. in England, and } 5d. per lb. in Ireland .. .. . }	0 11 3	0 6 3
Soap used .. .. . }	0 1 0	0 0 8
Combing, Weaving, reckoning the same in both } places .. .. . }	0 9 0	0 9 0
	<hr/> 1 19 3 <hr/>	<hr/> 1 7 11 <hr/>

So that a piece of serge which cost in Ireland but one pound seven shillings and eleven pence, would cost in England one pound, nineteen shillings, and threepence, which is forty per cent. difference.†

From the jealousy above exhibited of the worsted manufacturers of our Plantations, it is evident that the weavers, who in the time of Charles I., were forced from their homes to find refuge in New England, and other parts of America, had prospered, and so far advanced in their occupations as by a just retribution, to be competitors with us in the markets of the continent.

No sooner had the woollen and worsted callings been discouraged in Ireland, than the clothiers and wool growers of England, ever on the watch to guard with jealous care what was considered the golden fleece, the products of wool, from injury or competition, raised, once more, a mighty

\* “The Interest of England as it stands with relation to the Trade of Ireland considered.”—*London*, 1698.

† No fewer than three Acts of Parliament were during this reign passed, for preventing the ‘running’ of wool abroad, but all without effecting the object.

clamour against the use of Indian stuffs, which now, without doubt, were rapidly supplanting, for dress and furniture, our own productions. One author, the writer of a pamphlet published in 1696,\* asserts, in alarming terms, that these Eastern goods threatened to become “the *general wear* in England,” and although this may be pronounced a great exaggeration, yet, we are informed by very many contemporary authorities, that calicoes, towards the end of this century had come into much larger consumption here than before. In his *Weekly Review*,† the famous De Foe, writing on this subject, observes,

“The general fancy of the people runs upon East India goods to that degree, “that the chints and painted calicoes, which before were only made use of for carpets, quilts, &c., and to clothe children and ordinary people, became now the “dress of our ladies; and such is the power of a mode, as we saw some of our “persons of quality dressed in Indian carpets, which a few years before their “chambermaids would have thought too ordinary for them: the chints were “advanced from lying upon their floors to their backs; from the footcloth to the “petticoat; and even the Queen herself at this time was pleased to appear in China “and Japan, I mean China silks and calico. Nor was this all, but it crept into “our houses, our closets, and bedchambers; curtains, cushions, chairs, and at last “beds themselves were nothing but calicoes or Indian stuffs, and in short almost “everything that used to be made of wool or silk, relating either to the dress of the “women or the furniture of our houses, was supplied by the Indian trade.”

In addition to the outcry raised by a host of pamphleteers of the period, the cities of London, Norwich, Canterbury, and other cities and towns interested in the clothing trades, petitioned Parliament to prohibit the use of Indian stuffs. It is apparent that the worsted business was especially damaged by the introduction of calicoes. A passage taken from one of the pamphlets exposing this evil, presents some details worthy of attention.‡ Therein we find, that “serges, tammies,

\* “The Naked Truth, in an Essay upon Trade,” published in 1696.—Quoted in Baines’ ‘Cotton Manufacture,’ page 78.

† *Weekly Review*, Jan. 31st, 1708.—Quoted in Baines’ ‘Cotton Manufacture,’ page 79. Though the article was written in 1708, yet he is writing of the state of affairs previous to the year 1700, and states, that the prohibition of Indian goods, by the Act of Parliament, had averted the ruin of our manufactures.

‡ “England’s Advocate, in a Letter to a Member of the House of Commons,” 1699, pages 5 and 11.



and Norwich stuffs," were mostly the articles for which the East India commodities had been substituted, and that excessive injury had thereby been occasioned to the wool-growers. Another particular of a very interesting kind is disclosed, namely, that the making of worsted crapes had given new life and vigour to our fading trade.

"The weavers and silk and mohair throwsters are a numerous company. From the Restoration to the Revolution, this profitable and necessary broad weaving trade increased nineteen parts in twenty, to what it was before. And although the foundation of our desolation began its effects towards the end of King Charles's reign, and that vast quantities of East India wrought silks were brought over, it was chiefly to the prejudice of the woollen manufacture; for then the better sort of women scorned them, and they were mostly used instead of serges, tammies, and Norwich stuffs. But that produced such dismal effects, that the growth of several years' wool lay to moth-eat, till the invention of silk and worsted crapes gave new life both to the wool and silk manufactures, and rendered the Indian silks and stuffs contemptible to all sorts of people. And to the advantage of all parts and places where those manufactures were settled, many fields were turned into streets, and the houses let before they could be finished."

The writer, of course in these last sentences is alluding to previous times, for he proceeds to lament the decay of trade which had since occurred, from the revived introduction of the East India goods.

Another passage may be quoted from this interesting and well informed writer, but to render its purport quite plain, it will be needful to preface these explanations:—In exchange for our woollen cloths exported to the Levant, vast quantities of grograin or mohair yarn, (and also silk,) were received, which being wrought up at home, produced a double benefit; first, by promoting the clothing and then the worsted trade, inasmuch as the camblets made from the mohair were formed into camblet cloaks, coats, and gowns, which had been much in vogue and patronized.

"And here, as one cause, I cannot but take notice of a mistake which well meaning persons make, in imagining that by wearing fine English cloth they were great consumers of English wool, which is a great error; for it hath been proved more than once before the parliament that no cloth of above 10s. a yard white, or 13s. per yard in mixed colours, sold at Blackwell Hall hath one drachm of English wool therein. And so all the better sort become only the consumers

“ of Spanish wool, and by this means *hair camblets, prunellos, calimancoes*, velvets, silks, &c., are much disused; though for purchasing the materials whereof they were here made, our own cloth manufactures were in great quantities exported, and to which a great stop by that means is made. So that hereby a double manufacture is discouraged, and a double gain to the nation lost; for he that wears a hair camblet coat or cloak, or prunello gown, or any sort of hair or silk velvet, or shag, is, in effect, a more true consumer of wool than he that wears fine cloth. *Grogran* or mohair yarn, of which the aforesaid commodities are made, being generally the product or exchange of our coarsest English woollen cloth. And before the war we had attained to that perfection, not only to serve ourselves with *hair camblets*, which before used to be sent us from Brussels and Holland, but to serve the wisest Paris and other French merchants.”

Many powerful writers employed their pens to convince the public that the East India Company's importations benefited the nation. Among these advocates may be found the influential name of Dr. Davenant, the eminent financier, who, (like the noted Sir Josiah Child, some twenty years before,) endeavoured to prove, that the East India trade was very advantageous to the country at large, and ought to be continued. He based some of his arguments in favour of allowing the use of East India stuffs at home on the following proposition:—“That the woollen manufacture is undoubtedly by laws, and all possible care to be encouraged; but, 'tis its exportation and *not its home* consumption that must bring profit to the kingdom.” “'Tis granted,” adds he, “that Bengal and stained calicoes, and other East India goods, do hinder the consumption of Norwich stuffs, &c.; but the same objection will lie against the use of anything foreign.”\* But the populace were not to be appeased by reasons like these. Tumults took place among the weavers in various parts of the country, which were excited by the wool-growers, and others interested in the great staple manufactures of the country. To quell the storm, a statute, after much opposition passed, which recites,—“That the continuance of the trade to East India, in like manner as had been for *two years before*, must inevitably be to the great detriment of this kingdom, by exhausting its treasure and taking away the labour of the people,” and prohibiting the importation of

\* “An Essay on the East India Trade, in a Letter to the Marquis of Normanby.”

all wrought silks, Bengals, and stuffs of the manufacture of Persia, China, or East India; and also all calicoes, printed, painted, or dyed, so that none should be worn or used in either apparel or furniture in England, on pain of forfeiting it, and also under a fine of £200 on the person having or selling the same;\* thus establishing the principle often enunciated at this time, "that the importation of such goods as hinder the consumption of our own, or check the progress of any of our manufactures, is a visible disadvantage." Few parliamentary measures have been so popular as this one, because the ferment which had been excited pervaded the whole kingdom; for all branches of textile occupations, whether woollen, worsted, linen, silk, or mohair, were implicated in the subject.

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In closing this chapter, and with it the seventeenth century, a retrospect of the state of the worsted manufacture in England, and the condition of the workpeople employed therein, will be, it is presumed, both well timed and in place. So mixed up, however, in all the calculations and statements of this period respecting manufactures from wool, are woollens and worsteds, as often before noticed, that to estimate with anything like tolerable correctness the relative or positive magnitude of each, is a very difficult, if not impossible task. The following remarks will, it is expected, shed light on this topic, and present to the reader the only exact data thereon, which it seems is now available. A very able and trustworthy authority, Gregory King, towards the termination of the seventeenth century, valued the whole of the wool shorn in England at £2,000,000 sterling, and that of the manufactures from it at £6,000,000, and with the value of the materials at £8,000,000. That this estimate may be relied upon, is vouched by other eminent writers; for instance, by Dr. Davenant, whose calculations on these subjects are from

\* "An Act for more effectually employing the Poor, by encouraging the Manufactures of this kingdom."—11 & 12, William III., chap. 10.



his position and accuracy entitled to great weight. Put in juxtaposition with the other resources of the kingdom, we behold the immense magnitude of this department of industry, and its vital importance to the kingdom; being to the welfare of the state what blood is to the body. At once we are compelled to acquiesce in the boast, that wool and its manufactures constituted the “most solid foundations of the national prosperity and riches.” For look at the entire resources of England of every description:—

The Annual Income of which the whole	}	£43,000,000
people subsisted, and out of which		
taxes of all kinds were paid, amounted		
to about . . . . .		
The Yearly Rent of the Land. . . . .		£10,000,000

What a grand, what an astonishing impression this conveys of the wealth accruing from the handicrafts employed on wool, producing merchandise nearly equal to one-fifth of the whole annual income of the realm, and almost approaching to the value of the land!\*

Of the two customers for our worsted stuffs, the home and the foreign, unquestionably the former was the best and most extensive purchaser. This is exemplified in the previous pages, and it must be remembered that towards the termination of this century, the population of England approached, according to the most moderate and reliable authorities, to near 6,000,000 persons, among whom these worsted fabrics were in large request. The export trade therein had also, since the accession of the Prince of Orange, swelled to a great amount. A tolerable notion of the extent of English trade may be formed from the single fact, that at this period the merchants of London alone, numbered nearly 2,000; and in addition those of Norwich, Exeter, and Bristol, whence large

\* For proof of the statements in the two last paragraphs, see Smith's *Memoirs of Wool*, vol. 1, page 222, and Macpherson's *Annals of Commerce*, vol. 2, page 707, and the works there quoted.

shipments of our worsteds took place, were both very numerous and wealthy. Dr. Davenant, in his Reports to the Commissioners of Accounts, states, that there was exported from England in the year 1699, merchandise to the value of £6,788,166, of which nearly one half, namely, £2,932,292 consisted of woollen and worsted manufactures, exhibiting in a wonderful view the mighty export trade we carried on therein. Though the proportion which worsteds bore to the whole of the productions from wool used at home and exported, cannot be accurately ascertained, yet great help in forming an estimate may be obtained, from the table inserted in a previous page\* drawn up from the Aulnagers' accounts, and also from that printed hereafter, exhibiting the exports of woollens and worsteds in the year 1709, and the following years. Let us survey in detail our foreign trade,—

Previous to the Princes of the House of Bourbon occupying the Spanish throne, the trade to Spain “was esteemed “as the best flower in our garden, that took off more of our “woollen manufactures, and made us greater returns of money “than any other trade; that enabled greater numbers of our “people to live, without help from the parish, than any other “trade whatsoever.”† Our chief exports of perpetuanas, serges, and says, were conveyed to Spain. Colchester bays, and shalloons were in great request for the garments of the people, and also of the monks and nuns. On days of ceremony the King of Spain appeared in a cloak of English stuff; but, towards the end of the century, French fashions and modes were introduced, and we lost a large portion of our trade thither.

But this diminution of trade to Spain did not sensibly lessen our exports, for as excellently remarked by De Foe:— “Our manufacture [from wool] like a flowing tide, if it's bank't “out in one place, it spreads by other channels, at the same “time, into so many different parts of the world, and finds “every day so many outlets, that the obstruction is not felt; “but, like the land to the sea, what it loses in one place it

\* See page 173.

† British Merchant, edited by Charles King, vol. 3, page 232.

“gains in another.”\* But we still continued to obtain a fair share of the Spanish market against all competitors, and especially in Colchester bays, which, in 1697, rose from seventeen-pence to two-shillings the Flemish ell, because of the demand.

Portugal, also, was a very profitable customer for our worsted goods of all descriptions. Although, before the treaty with Portugal in 1703, our woollen cloth, had for twenty years been prohibited, and the Portuguese made it for themselves, yet such was not the case as to worsted stuffs, which were allowed to enter the kingdom. In the year 1702 we exported to Portugal—

lbs.	
244,707	in stuffs and druggets
76,899	in says
<hr/>	
321,606	
602,604	in perpetuanas and serges
<hr/>	
lbs. 924,210	

And in the following three years there was about the same amount exported thither.† As in Spain, worsted articles and bays formed a large portion of the dress of the people. We also shipped to Brazil (then a Portuguese colony) immense quantities of stuffs, and received in exchange the precious metals. The inhabitants “commonly wore waistcoats and “breeches made of fine camblets and other stuffs of crimson “and scarlet, and over all a cloak of Essex bays.” “’Twas “the same in other parts of South America, at Carthagena, at “Panama, at Lima, and St. Jago, the capital and richest cities “of their several countries, some of them situate within ten “degrees of the Equinox.”‡

Italy, notwithstanding French competition, still remained a very good customer to us, being “generally clothed in English

\* De Foe’s Plan of English Commerce—Preface.

† British Merchant, vol. 3, page 74.

‡ De Foe’s Plan of English Commerce.



“cloth or thin stuffs; the clergy in black bays; the nuns “veiled in fine says and long ells.” We traded also to Leghorn, Genoa, Naples, and other great marts of Italy, in serges and camblets. The English goods being of better materials and better make, were in good estimation, and retained the market to a great extent against the French and Dutch, both of which endeavoured to palm their articles upon the buyers under pretence of being English fabrics, and when not able to accomplish this fraud, then by underselling.

To other parts of the Mediterranean, considerable quantities of English stuffs were forwarded—Barbary took some, but the Levant trade was the most important on this sea. Smyrna was one great entrepôt, (besides Constantinople, Aleppo, and Alexandria,) whence all the Levant and other parts of the East, even as far as Persia, were supplied. The Turkey Company ever since its formation had been of essential benefit to England, by purchasing freely not only our woollen cloths but also stuffs, and bringing home in exchange mohair for the use of the hair camblet manufacturers, whose trade, it has been shown, was an extensive one in England.

Returning to Europe: the Dutch bought our stuffs in enormous quantities, being a sort of factor for supplying all the markets of the world, not only with their own manufactures and productions, but also those of other countries. It is estimated that they took above £2,000,000 worth of our woollens and worsteds, which they re-sold in great part to other nations.

Flanders also took from us serges and other stuffs to a considerable amount, but, in the year 1698, they were prohibited for a short time by the Flemish, in retaliation for our having barred the trade to this country of their bonelace.

France, for very many years, had dealt little with us for woollens or worsteds. Even so early as the year 1686, the export of them thither was very unimportant, (except for perpetuanas,)\* but after the accession of the Prince of Orange, it ceased.

\* It is evident that France was an unprofitable customer to us; for the whole of the woollen, worsted, and silk manufactures, shipped from the port of London

Formerly the Eastland Company had exported to Denmark, Sweden, Muscovy, and other quarters in the north of Europe, a large stock of worsted stuffs (used by the Muscovites in summer for their long vests,) but of late, this trade had to a great extent, been engrossed by the Dutch. Still we vended in the countries bordering on the Baltic, much of our stronger worsted fabrics: also in various parts of Germany, though in some, our stuffs were prohibited, and the Dutch supplied them.

But after the home trade, probably the most beneficial in every respect was the export of woollen and worsted fabrics to our American Plantations, which were now in a very thriving condition, and rapidly stretched their roots across the vast continent of North America. Pennsylvania traded with

to France, from Michaelmas 1668, to Michaelmas 1669, according to the Custom House Books, were only these :—

	£	s.	d.		£	s.	d.
354 Pieces of Norwich Stuffs, at ..	2	0	0	per Piece	708	0	0
5564 Pieces of Serges and Perpetuanas ..	2	10	0	..	13910	0	0
2288 Pieces of Single Bays .. ..	2	10	0	..	5764	0	0
166 Small Minikin Bays .. ..	6	0	0	..	996	0	0
466 Small Double Bays .. ..	4	0	0	..	1864	0	0
2140 Dozen Men's Worsted Hose ..	2	0	0	..	4280	0	0
832 Dozen Men's Worsted Hose ..	1	5	0	..	1040	0	0
1170 Dozen of Children's Hose ..	0	8	0	..	468	0	0
400 Yards of Flannel .. ..	0	1	0	..	20	0	0
1200 C. Goads of Cotton .. ..	9	0	0	..	10800	0	0
112 Long Cloths .. ..	10	0	0	per Cloth	1120	0	0
42 Short Cloths .. ..	8	0	0	..	336	0	0
829 Spanish Cloths .. ..	15	0	0	..	12435	0	0
97 Double Northern Dozens .. ..	5	0	0	..	485	0	0
69 Single Northern Dozens .. ..	2	0	0	..	138	0	6
13 Devon Dozens .. ..	2	0	0	..	26	0	0
173 Cloth Rashes .. ..	5	0	0	..	865	0	0
6 Pennystones .. ..	3	0	0	..	18	0	0
3585 Kersies .. ..	1	15	0	..	6273	0	0
960lbs. English Wrought Silk.. ..	2	0	0	..	1920	0	0
					£63,466	0	0
It was estimated that one-third more was sent from all other } parts of England .. ..					21,155	6	8
Total Value of these Articles exported from England to France					£84,621	6	8

us extensively for stuffs, likewise New York, New Jersey, Maryland, and Carolina although they manufactured a large portion for themselves. The West India Isles also purchased upon an extensive scale our stuffs, especially Jamaica and Barbadoes.

In conclusion we may justly adopt the boast of De Foe, "Nothing," says he, "can answer all the ends of dress but "good English broad cloth, fine camblets, druggets, serges, "and such like, these they [foreign nations] must have, and "with these none but England can supply them. Be their "country hot or cold, torrid or frigid, 'tis the same thing, "near the Equinox or near the Pole, the English woollen "manufacture clothes them all: here it covers them warm "from the freezing breath of the northern bear, and there "it shades them and keeps them cool from the scorching "beams of a perpendicular sun. Let no man wonder that "the woollen manufacture is arrived to such a magnitude, "when in a word it may be said to clothe the world."\*

And here it may be convenient to glance at the state of the worsted trade abroad, as exhibiting the extent of competition experienced by us. Independent of the small amount of rivalry from Scotland, Ireland, and our American Plantations, the Dutch and French were the only nations whose transactions in this respect were of sufficient magnitude to excite alarm.

While the worsted manufacture flourished exceedingly in Flanders in the middle ages, strange, but nevertheless true, it was little practised in Holland. After the fall of the city of Antwerp, the Dutch greatly profited by that event in manufactures. Also the persecutions of Laud, in our own country, contributed to increase the number of worsted artisans in Holland; and, upon the revocation of the Edict of Nantes, very many French weavers also sought refuge there. All these causes contributed, along with the growing maritime power, free institutions, and industry of the Dutch, to render them an extraordinarily prosperous people. In particular,

\* De Foe's Plan of English Commerce, page 190.



their woollen and worsted branches were in a vigorous condition, protected and nursed by the state. Certainly in the seventeenth century, they had become our most formidable competitors in commercial affairs, and might be found with their woven fabrics contending against us in all the principal markets of the world. Towards the end of the century, their worsted manufactures had somewhat declined, and were neither so thriving nor extensive as they had formerly existed. The three principal manufacturing localities in Holland at this date were Amsterdam, Leyden, and Haerlem: the first making cloths, camblets, and all sorts of woollen and hair stuffs, far exceeded the other two in the extent of its productions. Leyden stood distinguished for the fineness of its stuffs such as serges, camblets, and the like. Haerlem made many varieties of stuffs, but they were not esteemed of such good quality as those of Leyden. To carry on these operations, the Dutch obtained the larger and better portion of their wool from other countries. In the north of Holland, it is related, that a "*little* long wool" was grown, but the remainder they brought from England and Spain, procuring the former by contraband means. Their stuffs were exported in large quantities to the countries bordering on the Baltic; in Muscovy and Poland especially, they had almost ruined our commerce, which had been carried on through the Eastland Company, who purchased for this quarter largely of our woollens and worsteds. To Spain, the Dutch shipped serges and camblets of all sorts, fine and coarse, as well as many other varieties of stuffs, taking in return Spanish wool. Besides, they supplied Portugal with a large quantity of these goods. Likewise, they had established themselves in the Levant trade, having what was termed in those times a factory, that is a station of traders, at Smyrna.\* But this commerce in the early part of the century was very insignificant, for an author of extensive and on the whole accurate information, writing in 1638,† states, "their trade is generally throughout the world in

\* Huet's Memoirs of the Dutch Trade.

† "The Merchants' Map of Commerce, by Lewis Roberts, Merchant," (1638,) page 119.

“imitation of their neighbours, the English, *whose steps for many years they have followed*, only in Turkey they have but small traffic, by reason their country wants those commodities that are fit and proper for that empire, such as cloths, lead, and tin, the main staple of the English trade thither.”

Until the latter half of the seventeenth century, the worsted manufacture in France was of insignificant dimensions, and we supplied them largely with our stuffs; but gradually this profitable source of commerce declined, and for many years the French had become formidable rivals to ourselves, not only supplying themselves, but exporting to a great extent. As mentioned in a former page, they were, in the lighter articles such as crapes and the like, very expert workmen; but they had also of late improved in the manufacture of the heavier and coarser kinds, such as perpetuanas, serges, and says. The successive statesmen of France had devoted much attention to render these staple articles of production, and had, with mighty efforts, endeavoured to push them into the markets where our stuffs were offered. By every stratagem the long wool of these islands was procured, and under all these circumstances the weaving of worsted was carried on prosperously. The French had too this notable superiority, that inasmuch as the workpeople lived cheaply and coarsely, principally upon vegetable diet, the price of labour was very much less. For a long period, we had the almost exclusive trade in bays and says to Spain, where they formed the national attire and especially the garments of the religious. But the French by degrees had crept into this trade, and, to our great loss, supplanted us to a large extent. The old fashions in Spain gave way to French modes, both in material and make. This was also the case with Italy whither they sent large assortments of worsteds, and to encourage this commerce their king ordained, that bays, perpetuanas, &c., should pay only a small duty. But in Turkey and the Levant they especially injured our sales.\* A writer about

\* British Merchant, vol. 1, page 7.



this period thus describes the encroachments of the French,—  
“At the famous manufactory near Nismes, in Languedoc,  
“cloths are made so admirably well that some have even  
“thought they outdid the English, and certain it is they are  
“very good, but want the substance and firmness and weight  
“of the English. They have likewise imitated the British  
“serges, says, long ells, perpetuanoes, druggets, but not to  
“such perfection as they have the cloths, yet to so great a  
“degree, that they have extremely lessened the demand for  
“these goods in Italy and Spain, and we had some threats  
“that they would throw us out of the trade of Cadiz for the  
“Spanish West Indies.” Among the principal seats of the  
worsted manufacture in France, the following may be specified:  
Nismes for serges, designated for their excellence by the name  
of the place:—Castres, in Languedoc, for crapes:—Amiens  
for a species of lasting; hence our stuffs designated *Amens*.  
The French productions consisted of serges, says, camblets,  
calimancoes, tammies, crapes, bays, and perpetuanas, (often  
termed by them imperial serge,) besides an infinite number of  
varieties, if we may judge from the names, most of which  
however were probably the same articles with different designations.

One of the best and most trustworthy standards of the social condition of the artisans of a nation, may probably be found in the rate of wages received by them. Macaulay, in his graphic and luminous pages, having devoted considerable space and attention to the subject, the following paragraphs from his work will be read with more pleasure and profit than any account drawn up in its place. “The remuneration of  
“workmen employed in manufactures,” he remarks, “has  
“always been higher than that of tillers of the soil. In the year  
“1680, a member of the House of Commons remarked, that  
“the high wages paid in this country, made it impossible for  
“our textures to maintain a competition with the produce of  
“the Indian looms. An English mechanic, he said, instead  
“of starving like a native of Bengal for a piece of copper,  
“exacted a shilling a day. Other evidence is extant, which



“proves, that a shilling a day was the pay to which the English manufacturer then thought himself entitled, but that he was often forced to work for less. The common people of that age were not in the habit of meeting for public discussion, of haranguing, or of petitioning Parliament. No newspaper pleaded their cause. It was in rude rhyme that their love and hatred, their exultation, and their distress, found utterance. A great part of their history is to be learned only from their ballads. One of the most remarkable of the popular lays chaunted about the streets of Norwich and Leeds, in the time of Charles II., may still be read on the original broadside. It is the vehement and bitter cry of labour against capital. It describes the good old times, when every artisan employed in the woollen manufacture lived as well as a farmer. But those times were past. Sixpence a day now was all that could be earned by hard labour at the loom. If the poor complained that they could not live on such a pittance, they were told that they were free to take it or leave it. For so miserable a recompense were the producers of wealth compelled to toil, rising early, and lying down late; whilst the master clothier, eating, sleeping, and idling, became rich by their exertions. A shilling a day, the poet declares, is what the weaver would have if justice were done.\* We may therefore fairly conclude, that in the generation which preceded the Revolution, a workman employed in the great staple manufacture of England, thought himself fairly paid if he gained six shillings a week.”†

\* “This Ballad is in the British Museum. The precise year is not given; but, the imprimatur of Roger Lestrangle fixes the date sufficiently for my purpose. I will quote some of the lines.—The master clothier is introduced speaking as follows:—

“In former ages we used to give,  
 “So that our workfolks like farmers did live,  
 “But the times are changed, we will make them know.

\* \* \* \* \*

“We will make them to work hard for sixpence a day,  
 “Though a shilling they deserve, if they had their just pay.”—

Macaulay's Note.

† Macaulay's History of England, vol. 1, page 418.—*London*, 1849.

After shewing from the accounts of the Commissioners of Greenwich Hospital from the commencement, that bricklayers' and masons' wages have nearly doubled, he proceeds,—

“It seems clear therefore that the wages of labour estimated in money, were in 1685, not more than half of what they now are; and there were few articles important to the working man of which the price was not, in 1685, more than half of what it now is. Beer was undoubtedly much cheaper in that age than at present. Meat was also cheaper, but was still so dear, that there were hundreds of thousands of families who scarcely knew the taste of it.\* In the cost of wheat there has been very little change. The average price of the quarter, during the last twelve years of Charles II., was fifty shillings: bread, therefore, such as is now given to the inmates of a workhouse, was then seldom seen even on the trencher of a yeoman or of a shopkeeper. The greater majority of the nation lived almost entirely on rye, barley, and oats. The produce of tropical countries, the produce of the mines, and the produce of machinery, was positively dearer than at present. Among the commodities for which the labourer would have had to pay higher in 1685, than his posterity in 1848, were sugar, salt, coals, candles, soap, shoes, stockings, and generally all articles of clothing, and all articles of bedding.”

On these remarkable passages two classes of observations apply, so far as relates to the particular subject of this work—First: Wages are in their very nature liable, even in the course of a year, to great fluctuations; but, from the information before us it may be confidently assumed, that the remuneration of combers and worsted weavers was not only higher than that of the mere tiller of the soil, but even of the workmen employed in making woollen cloth. From the speech of Mr. Basset, which has been alluded to before,† it will

\* “King, in his *Natural and Political Conclusions*, roughly estimated the common people of England at 880,000 families; of these families, 440,000, according to him, ate animal food twice a week; the remaining 440,000 ate it not at all, or at most not oftener than once a week.” Macaulay's Note.

† See page 168.

be seen that English weavers expected one shilling a day, and from the ensuing reasons it may reasonably be inferred, that prior to the year 1700 the wages of worsted weavers much exceeded that sum. In a pamphlet, afterwards quoted, written at the commencement of the next century,\* (published in 1715,) the remuneration of persons engaged in worsted pursuits are instanced thus :—combers, ten shillings, and weavers about the same, a week ; and in the course of so short an interval, there would, most likely, be no material, if any, alteration ; for it will be remembered that our textile avocations were in a very prosperous condition at the former epoch. Second : Without denying that a large, or even a major part of the toiling population tasted little animal food, there is fair evidence of such not being the case with operatives employed in the cloth and stuff departments, because De Foe, a most accurate observer of the condition of the productive classes, alluding in the early part of the next century (when much change could not have happened) to this very point states :—“ They [the persons engaged in the “ clothing trades] eat well and drink well ; for their eating, “ namely of flesh meat, such as beef, mutton, bacon, and in “ proportion to their circumstances, ’tis to a fault, nay even “ to profusion ; as to their drink ’tis generally stout strong “ beer, not to take notice of the quantity which is sometimes “ a little too much, or good table beer for their ordinary diet ; “ for the rest, we see their houses and lodgings tolerably furnished, at least stuff’d well with useful and necessary household goods : even those we call poor people, journeymen, “ working and pains-taking people, do thus ; they lie warm, “ live in plenty, work hard, and (need) know no want.”†

All these observations lead to the conclusion, that the worsted artisans enjoyed, in comparison with the rest of the population, a very favourable position, obtaining high wages and faring plenteously. And this was peculiarly the case with the Norwich weaver : producing the choicest and most saleable textures, he and his family were usually well clothed

\* “ Great Britain’s Glory,” by John Haynes, published in 1715, pp. 8 & 9.

† De Foe’s *Plan of English Commerce*, page 101.



and well fed, and also above the ordinary rank in moral and social worth. The workpeople of Norwich were proverbial for the neatness and cleanliness of their homes, as well as for their intelligence and industry.

To the gains of the worsted weaver, the younger branches of his family largely contributed, as they assisted from an early age in the processes of the manufacture. Macaulay, treating on this topic, has the following:—"It may here be noticed, that the practice of setting children prematurely to work, a practice which the State, the legitimate protector of those who cannot protect themselves, has, in our time wisely and humanely interdicted, prevailed in the seventeenth century to an extent, which, when compared with the extent of the manufacturing system, seems almost incredible. At Norwich, the chief seat of the clothing trade, a little creature of six years old was thought fit for labour. Several writers of that time, and among them some who were considered as eminently benevolent, mention, with exultation, the fact, that in that single city, boys and girls of tender age created wealth exceeding what was necessary for their own subsistence by twelve thousand pounds a year.\* The more carefully we examine the history of the past, the more reason shall we find to dissent from those who imagine that our age has been fruitful in social evils. The truth is, that the evils are, with scarcely an exception, old: that which is new, is the intelligence which discerns, and the humanity which relieves them."†

It must not, however, be forgotten that this system of the seventeenth century was quite different to the present one. In that age it was under the domestic roof that most of these children were engaged in worsted spinning, or other work connected therewith, under the superin-

\* "Chamberlayne's State of England; Petty's Political Arithmetic, chap. 7; Dunning's Plain and Easy Method; Firmin's Proposition for Employing the Poor. It ought to be observed, that Firmin was an eminent Philanthropist." Macaulay's Note.

† Macaulay, vol. 1, page 419.

tendence of their parents, who were likewise labouring at the spinning wheel or the loom, and who could thus regulate their children's labour according to their strength, and watch over and correct their general conduct. Throughout the length and breadth of the land, spinning and weaving were performed by hand, principally at home. In most cases the master manufacturer merely supplied the material, combed wool, or the yarn, and it was returned to him woven into the required articles, thus in the main resembling the condition of the worsted hand-loom weaver of Bradford, at a very recent period. Such a system was, almost in every respect, quite opposite to that of factory labour now, and the peculiar evils of the latter could not appertain to the former. Reverting to the pamphlet previously quoted,\* the wages of two hundred and fifty spinners are set down at £18 for the week, about eighteen-pence each, so that we may perhaps conclude, from the smallness of the remuneration, that these spinners must have been children. This pittance would not seem to exceed "what was necessary for their subsistence."

Norwich and Norfolk still supplied the main portion of worsted textures; that city for the extent and variety of these goods, for improvements and beauty of workmanship, occupying then the same position as that which Bradford holds at present. Formerly, as before demonstrated, Norwich contained a vast population. By actual enumeration in 1693, it reckoned from 28,000 to 29,000 souls, half only of its former swarm of inhabitants. But this decrease must be attributed to the fall in the number of people throughout the kingdom, for Norwich still continued among the very foremost of the towns of England. At the end of the seventeenth century, not one of our provincial towns contained quite 30,000 inhabitants, and only four numbered above 10,000. Bristol reckoned about 29,000; York and Exeter, the next in size to Bristol and Norwich, not much more than 10,000; all else were below that point. Manchester contained 6,000, and Leeds less. Norwich, at that time, stood in every respect

\* Haynes' Pamphlet before quoted.

a leading city, not only, to use the words of Macaulay, "*as the chief seat of the chief manufacture of the realm,*" but also distinguished for the opulence of its manufacturers and its merchants, the grandeur of its buildings and the high tone of refinement, when compared with other places, which it had reached. The brilliant pages of Macaulay attest its pre-eminence.\* Exeter for serges, Canterbury and Colchester for says, and Coventry for tammies, (besides a host of smaller places,) had also sprung into importance as centres of particular species of fabrication in worsted, and were large, populous, and prospering. Owing to the badness and insecurity of the roads, often impassable in wet seasons, and always infested by bands of daring highwaymen, the inland carriage of merchandise was tedious and expensive to a degree almost passing belief. Some notion of the cost may be gathered from the fact that the charge for conveyance from Exeter to London by the ordinary mode—stage waggons and

\* "Norwich was the capital of a large and fruitful province. It was the residence of a Bishop and of a Chapter. It was the chief seat of the chief manufacture of the realm. Some men, distinguished by learning and science, had recently dwelt there; and no place in the kingdom, except the capital and the universities, had more attractions for the curious. The library, the museum, the aviary, and the botanical gardens of Sir Thomas Browne, were thought by Fellows of the Royal Society well worthy of a long pilgrimage. Norwich had also a court in miniature. In the heart of the city stood an old palace of the Dukes of Norfolk, said to be the largest town house in the kingdom, out of London. In this mansion, to which were annexed a tennis court, a bowling green, and a wilderness stretching along the banks of the Wansum, the noble family of the Howards frequently resided, and kept a state resembling that of petty sovereigns—drink was served to guests in goblets of pure gold—the very tongs and shovels were of silver—pictures by Italian masters adorned the walls—the cabinets were filled with a fine collection of gems, purchased by that Earl of Arundel whose marbles are now among the ornaments of Oxford. Here, in the year 1671, Charles and his court were sumptuously entertained—here, too, all comers were annually welcomed from Christmas to Twelfth-night—ale flowed in oceans for the populace. Three coaches, one of which had been built at a cost of £500, to contain fourteen persons, were sent every afternoon round the city to bring ladies to the festivities, and the dances were always followed by a luxurious banquet. When the Duke of Norfolk came to Norwich, he was greeted like a king returning to his capital. The bells of the cathedral and of St. Peter Mancroft were rung—the guns of the castle were fired—and the mayor and aldermen waited on their illustrious fellow citizen with complimentary addresses."—Vol. 1, page 336.



pack horses—reached the enormous sum of £7 a ton or 1s. 3d. a mile,\* to which must be added the high value of money at that period. Thus the sea became the great highway whereby all manner of merchandise was dispatched as the readiest, safest, and cheapest course. Norfolk is admirably situated for sea carriage, possessing every facility through the ports of Lynn and Yarmouth for the passage of her worsteds, both for the export and home trade. Exeter and Colchester in like manner enjoyed this advantage, which in a great degree promoted the prosperity of the worsted weavers. A large portion of the export and home traffic in worsteds was transacted in London, whither they were very conveniently conveyed by water. This stuff trade was chiefly managed between the country and London merchants, the former consigning their goods to the latter. A duty, termed ‘Balliage,’ was levied by the city of London under the authority of the 2 William & Mary, chap. 8, upon worsted stuffs, namely a half-penny for every single piece, and a penny for every double piece. London was also engaged in the manufacture of stuffs, principally mixed goods, which had risen, since the coming of the French emigrants, to an important item of trade. They principally settled in the Eastern portion of the city, where they carried on, often in conjunction, the making of silks and other light stuffs.

So numerous were the descriptions of worsted textures manufactured at this date, that with reference to them the words of old Fuller, applied many years before, may be aptly quoted. Here is the passage:—“Worsteds, these took their name from Worsted, a village in this county, [Norfolk.] “Originally it is nothing but woollen thread spun very fine, and “for the more strength twisted together. But oh! it surpasseth “my skill to name the several stuffs (being worsted disguised “with weaving and colouring) made thereof.”† The says, shalloons, calimancoes, russells, tammies, camblets, everlastings, amens and moreens; the bombazines, and Norwich

\* Macaulay, vol. 1, page 371.

† Fuller’s Worthies of Norfolk, vol. 2, p. 125.

crapes of that day, were, it will readily be conceived, infinitely inferior, in point of manipulation and fineness of make and finish, to the delicate and ingenious textures of the present age, fertile in every expedient, and stimulated by competition to the production of the choicest and best of fabrics, both as regards material and pattern. But when we reflect that the manufacture was then comparatively in a rude state, carried on principally as a domestic occupation ; that there were none of the modern gigantic appliances of steam power, moving wonderful automatic machines for spinning and weaving, but that these processes were performed by the hand alone, and were consequently slow and wearisome, one is astonished at the vast extent, in the seventeenth century, of the worsted trade, which, in all its varieties, held the first and proudest position in our manufacturing system, had grown to be the chief staple of the kingdom, and a main source of its wealth, prosperity, and power.

## CHAPTER VII.

Introduction of the Manufacture into Yorkshire.—Admirably adapted for a Manufacturing Seat.—Traces of the Shalloon Trade in Bradford and Halifax.—Worsted allowed to be exported Free of Duty.—Increase of New and decrease of Old Drapery.—Treaty with Portugal.—Union of England and Scotland affects the Worsted Trade.—Treaty of Utrecht.—Woollens and Worsteds exported in the Year 1709, and the following Years.—An extensive Commerce in Stuffs with the Continent.—Great numbers of people employed in working up a Pack of Long Wool into Stuffs, and the cost.—Description of the principal Seats of the Worsted Manufacture extracted from the Tour of De Foe.—Flourishing state of Norwich and the surrounding Country.—Exeter and its Serges described.—Coventry Tammies.—Colchester Says and Bays.—Prohibition of Calicoes, obtained through the Agency of the Norwich Manufacturers, but productive of injury to them.—Norwich Crapes much in vogue.—Statute for choosing Magistrates in Norwich from Worsted Weavers.—‘Manchester Act’ affects the Norwich Trade.—Competition between the two places.—Norwich attempts the Cotton Trade but fails.—List of Articles made from Combing Wool, as given by a Northamptonshire Worsted Manufacturer, and description of them.—Trades connected therewith.—Statement of the quantity of Long and Short Wool produced.—Value of the Manufacture.—Number of people employed therein.—History of the Manufacture up to the Year 1750.

HITHERTO every exhibited record denoting the progress of the worsted manufacture in England, has been confined to the Southern parts, and especially to Norfolk. But some time prior to the year 1700, it had been transplanted into Yorkshire, and speedily taking root as in a congenial soil, soon spread and became an important branch of occupation, and eventually outgrew the parent stem. Henceforward the onward course of the manufacture both in the South and North of England must be traced together, till, at last, the history of it belongs as exclusively to Bradford and the neighbourhood, and occupies as much attention as that of Norwich in the palmy days of its unapproached greatness as the principal seat.



It were idle, in the absence of any sufficient evidence, to conjecture by what means, or by what route, the art of making worsteds was introduced into Yorkshire, whether direct from Norwich, or by some circuitous course; whether by Southern manufacturers settling here for the sake of cheap hands in this populous quarter, already accustomed to the labours of the loom, or by some enterprising persons of the neighbourhood. No valid reasons have been discovered by the author to justify even a probable conclusion, and in such a case the most judicious method is to be careful not to mislead by ill supported conjecture.

The South-Western portion of Yorkshire possesses, beyond all rivalry, more natural advantages as a manufacturing district than any other in the kingdom, having, in abundance and of the best quality, those three grand requisites, water, coal, and ironstone. Intersected by small valleys, it abounds in rills, brooks, and rivers, excellently adapted either for the working of mills by water power, or for the use of the great 'iron servant of nations'—the steam engine. Besides coal for the supply of the steam engine is both plentiful and cheap. The coal field of the West-Riding, stretching to Derby and Nottingham, is one of the most valuable, productive, and most easily worked of any in the island. Iron also of the finest description, is found at the very door of the machine maker. Add to all these essentials that the rivers could easily be made navigable, and canals formed for the transit of goods; that the district is central, and what is of paramount importance, that the people are industrious and persevering, of indomitable energy of character, delighting in business, neither shunning labour nor fearing difficulties in the prosecution of their enterprises, and one may comprehend how the manufacture has obtained in such a spot, among such a people, a mighty growth and become one of the wonders of this progressive age.

Singularly enough the parish of Bradford, afterwards destined to become the chief, the supreme centre of this mighty manufacture, is the first place in Yorkshire in which traces of it has been found, so far as they have come to the

author's knowledge. There are extant documents in the latter portion of the seventeenth century, in which parties residing within the parish are described as shalloon manufacturers. Among the earliest thus designated, may be mentioned the respectable name of Horsfall, a family who possessing small estates in Haworth and Denholme, sought addition to their emoluments by carrying on, along with agricultural pursuits, those of trade. The descendants of these yeomen-manufacturers were among the first to introduce at Bradford, the use of machinery in the weaving of stuffs, and are still ever foremost in promoting the improvement of the worsted manufacture.

Likewise the district included in the wide parish of Halifax, had early transplanted thither, shalloon weaving. Bentley, in his account of the town, published in 1708, does not allude to its existence though he describes the great cloth mart at Halifax. But it must before or about that period have taken root at Halifax, because Watson, the historian of the place, who could, and no doubt did, ascertain the fact from living testimony, relates that the shalloon business was planted there early in the last century.\* This statement is rendered, it would seem, conclusive by the authority of De Foe, who resided for some time in Halifax, and must therefore have known all the circumstances. In his tour, after speaking of the trade of Halifax in kerseys, it is added, "some maintain "that it [the trade] is increased a fourth at least within these "fifty years, which is not improbable, for they have entered "upon a new manufacture of shalloons which were never "made in these parts before, at least not in any quantities."†

It must not, however, be supposed that this shalloon business either at Bradford or Halifax was, at this date, of much importance, or could rank among their staple occupations, which were confined to the cloth manufacture. And this was

\* Watson's History of Halifax, page 65, *et seq.* His words are "the shalloon "trade was introduced here about the beginning of the present century, and what are "called figured stuffs, or drawboys within the compass of a few years."—Watson's Work was published in 1775.

† De Foe undertook his Tour in or about 1714, but the Edition here quoted from bears date after his death, namely, 1738.

also the case with Colne, where also worsted weaving was early cultivated. Lancashire, most likely, first engaged in the shalloon business about the same date as Yorkshire. From a passage in an old work, printed in 1650, stating that the making of *mingled stuffs* formed one of the trade occupations of Manchester, it might be supposed that the worsted craft had then found its way to the North, but on a careful consideration of the subject, it seems that these textures were not *worsted* stuffs,\* and that with the exception of a few worsted haberdashery wares, no such like goods were there produced until long afterwards.

To resume the general history of the manufacture:—Last Session of Parliament, an Act had been passed, for the purpose of benefiting manufactures from wool, by repealing all the subsisting duties payable on their exportation,† and it now, in the year 1700, came into operation. Therein it is declared, that the wealth and prosperity of the kingdom in a great measure depended upon the improvement of its manufactures from wool, and the profitable trade carried on by the exportation of the same. The free passage of these commodities out of the realm, which was thus secured, undoubtedly increased their exportation. It has been stated that for the three years subsequent, this increase averaged yearly in value about £150,000. There is abundant testimony that the making and exporting of stuffs was steadily increasing, to the detriment of the sale of woollen cloths. Dr. Davenant, in a work published about this period, thus reasons on the fact:—"Some people have been apt to fear that we sink in  
"the woollen manufacture, because the accounts of the draperies exported have heretofore been larger than of late years;  
"but such do not contemplate that though the *old* may have  
"lessened, what are commonly called the '*new draperies*'

\* Hollinworth's description of Manchester, published in 1650. "The trade  
"[of Manchester] he observes, is not inferior to that of many cities in the kingdom  
"chiefly consisting in woollen frizes, fustians, sackcloth, mingled stuffs, caps,  
"inkles, tapes, points, whereby not only the better sort of men are employed but the  
"very children maintain themselves."

† 2 William III., chap. 20.



“*have increased*, consisting in bays, serges, and *stuffs*; so  
 “that upon the whole, infinitely more of the material of wool  
 “has of late years been wrought up for foreign use than in  
 “former times; and herein our merchants have only been  
 “forced to follow the modes and humour of those people with  
 “whom they deal, and the course they have pursued, has,  
 “hitherto, not been detrimental to the public. Nor is there  
 “any cause to apprehend, but that we may increase from time  
 “to time in the general manufacture of wool, though the  
 “exportation of particular commodities may now and then  
 “vary.”\* This remission of export duties above noted, was the  
 last event in the reign of William III., affecting the worsted  
 trade. From the Peace of Ryswick, in 1697, to the year  
 1702, when Queen Anne ascended the throne, all depart-  
 ments of our textile industry had grown and flourished in so  
 surprising a manner, as fully to denote that the condition of  
 our manufacturing arm had attained a vigour which could  
 not easily be depressed by untoward circumstances, and only  
 required favourable ones to exhibit its extraordinary potency.  
 Although war again broke out at the commencement of the  
 rule of Queen Anne, and continued about eleven years, yet  
 notwithstanding our textile avocations did not very materi-  
 ally suffer, showing that these interests, though somewhat  
 affected by the contest, were so full of energy that they still  
 made progress. Early in Queen Anne’s reign, her ministers  
 concluded the famous commercial treaty with Portugal, called  
 the ‘Methuen Treaty,’† whereby England bound herself to  
 admit the wines of Portugal at a small duty; and in return  
 our worsted merchandise obtained entry into that country upon  
 very favourable terms. This treaty continued in force until the  
 year 1831, and when entered into was considered very advan-  
 tageous to this kingdom. Ever since, when at war with  
 Spain, this advantage accrued from the alliance with Portugal,  
 our stuff goods were, with little trouble, introduced into  
 Spain through Portugal.

\* Davenant’s “Essay upon the probable methods of making people gainers in  
 “the Balance of Trade;” in Works, vol. 2, 235.

† The Methuen Treaty with Portugal was concluded in 1703.

Another of the measures of this time, the Union between England and Scotland, affected the trading interests of the former and especially the worsted portion, in an important manner. Before its accomplishment, large quantities of English wool had been conveyed to Scotland, and thence openly transmitted to the continent; but subsequently this practice was strictly forbidden. The sale of Norwich stuffs became also augmented in Scotland. Thus so far England reaped benefit; but this Union, in its results many years afterwards, did the worsted trade of England much damage, for Scotland, rapidly improving her woven manufactures, especially stuffs, and being now allowed to participate in our foreign trade, sent, as will afterwards be noticed, much of these kind of goods abroad, and among other parts to our thriving Colonies.\*

Great as were the evils attendant upon the war with France and Spain, and the injury inflicted thereby upon the trading and commercial classes, yet the treaty of Utrecht, concluding peace, was exceedingly unpopular. By the ninth article of that treaty, it was stipulated, that French merchandise should be admitted into England upon paying the same duties as that from other countries, whilst English goods, transmitted to France, became subject to the like impositions as in the year 1669, when the mercantile transactions between the two nations were, in consequence of the partiality of Charles II. to the French alliance, exceedingly prejudicial to the English. To understand fully the effect of this stipulation, it is necessary to examine the French tariff of 1669. According to it, English cloths of all descriptions including kersies, flannels, and *milled* serges, were to pay at the rate of  $24\frac{1}{2}$  per cent. on their value, whilst serges, perpetuanas, says, and other stuffs, were rated at 36 per cent. Thus, it is evident, that the treaty was peculiarly unfavourable to the introduction

\* In a former note at page 170, a cursory view is taken of the Scotch worsted manufacture up to 1683. A pamphlet printed in 1705, noticed in Smith's *Memoirs of Wool*, vol. 2, p. 63, gives an account of Scotland's products and manufactures, among the latter are "fingrines, serges, bays, crapes, temmim, Glasgow playds, and all sorts of fine worsted camblets." Between this period and 1733, as will hereafter be noticed, the growth of the manufacture had been great.

of our manufactures of wool, (especially worsteds) into France.\* All these, ("English cloth, ratines, and serges," to use the terms of the treaty) were to be allowed entrance into that country at three places only, St. Vallery, Rouen, and Bourdeaux. Fortunately those articles of the treaty which related to commercial questions had, previously to their ratification, to be submitted to the English Parliament for approval, and although ministers at that juncture were very powerful, they were outvoted on this point by nine votes. Shortly afterwards, the countenance given by the French king to the attempts of the Pretender, and the almost incessant wars between the two nations during the ensuing reigns, hindered any treaty of commerce taking effect. Another result prejudicial to the English would have accrued from the carrying out of such a commercial agreement with France, by putting that country in respect of its wines and other commodities upon the same basis as Portugal, to whom we were bound by the 'Methuen Treaty,' entered into in 1703, to admit their wines upon privileged terms, and in consequence of the thriving trade between the two countries, an immense quantity of woollens and worsteds were taken thither.†

Many years after the conclusion of the peace, the Earl of Oxford, as one of its principal concoctors, had articles of impeachment preferred against him, for his share in the transaction, and in his defence we are furnished with an exceedingly important table, purporting to shew the advantages of the peace by the increase in the exportation of woollen and worsted goods.‡ It is one of the very few state-

\* The French seem to have from the time of the Restoration increased their impositions upon the importation of our woollens and worsteds. Before the tariff of 1664 the duty of six livres was paid for a cloth, and one livre for a piece of worsted, and then the amount of these exported to France was great. By that tariff cloth or *milled* serges paid on entry to France, about ninepence a yard, and other serges, and worsteds fourpence a yard. By the tariff of 1669, the former paid about tenpence a yard, the latter fivepence.

† The whole of the information contained in this paragraph is taken from the *British Merchant*, edited by Charles King, and published in 1721.

‡ This Table is published as an appendix to the vindication of the Earl of Oxford printed in 1721.



ments, at this period, which classifies the different kinds of manufactures from wool, and is therefore so much the more valuable. The reader will be forcibly struck with the grand fact, that the new had quite outgrown the 'old drapery,' being immeasurably the largest, whether we consider the number of pieces, their value, the quantity of wool used, or the amount of workmanship employed therein, and deserves very careful attention. The evidence derived from it is broad and weighty, and admits apparently of no contradiction. Estimates in detail might be founded upon the relative proportions of the woollens and worsteds, but they would admit of controversy, whilst regarding the general fact there can be none. Of articles ranking as fine worsteds, no less than 6,206,650 pounds weight were exported in three years, unquestionably being of more value and employing more people than those of the pure woollens, and this without noticing the mixed fabrics, partaking both of the nature of woollen and worsted.

<i>Species of Goods.</i>	Exported in 1709, 1710, 1711.	Exported in 1712, 1713, 1714.	Increase in latter Years.
Bays .. .. .	127,492 $\frac{1}{2}$ pieces.	158,903 $\frac{1}{2}$ pieces.	31,411 pieces.
Cloth of all sorts ..	107,888 cloths.	152,644 cloths.	44,754 cloths.
Cottons .. .. .	273,017 goads.	525,227 goads.	252,210 goads.
Kersies .. .. .	59,884 $\frac{3}{4}$ pieces.	83,110 pieces.	23,225 $\frac{1}{4}$ pieces.
Perpets (Perpet- uanas) & Serges }	8,250,805 lbs.	8,643,505 lbs.	392,700 lbs.
Flannel .. .. .	990,451 yards.	1,213,949 yards.	223,498 yards.
Stockings .. .. .	81,472 dozen.	96,939 dozen.	15,467 dozen.
Stuffs .. .. .	3,186,031 lbs.	5,586,968 lbs.	2,400,937 lbs.
Says .. .. .	495,457 lbs.	619,262 lbs.	123,805 lbs.
Northern Dozens..	19,385 lbs.	52,151 lbs.	32,766 lbs.
Hats .. .. .	25,383 dozen.	29,373 dozen.	13,990 dozen.
Spanish Wool } imported into England .. }	13,986 bags.	20,388 bags.	6,402 bags.
Cochineal im- ported .. }	177,785 lbs.	220,667 lbs.	42,882 lbs.

P. S.—English Wool in the War was sold at 15s. a Tod, now at 18s.

Undoubtedly this table is conclusive evidence of the increase of trade after the peace, but it rarely happens that even after a most disadvantageous peace, commerce and

manufactures will not rapidly and surprisingly extend. In truth during the whole interval from the year 1700 to 1714 inclusive, the exports had been very large, as shewn by the receipts at the Custom House. The net amount of customs in that time averaged £1,352,764 yearly: at the first period they reached £1,379,460, at the latter £1,714,139, forcibly indicating that the national resources and prosperity stood now upon such a basis, that a long and arduous war could not very sensibly diminish them.\* It is estimated that so profitable was the export trade, that the general yearly balance in our favour, after deducting the value of all our imports, stood, from 1702 to 1712, at £2,881,357.†

As a proper and explanatory appendage to the above table of exports of our manufactures from wool, may be given the following extract from a work of Dr. Davenant, written in 1712.‡ Since the year 1700 a great change had arisen in our commercial affairs on account of the war with Spain, and the Dutch had much increased their carrying trade and their purchases of our goods. Therefore, notwithstanding a glance was given at the finish of the last chapter at our foreign trade, the following description of it since, will not, it is presumed, be misplaced or tiresome.—

After shewing that in 1703 the total value of our exports of woollen manufactures to Holland amounted to the enormous sum of £1,339,526, of which three articles alone, perpetuanas, serges, and stuffs, made up £798,527, he proceeds:—"They purchase these immense cargoes to re-export  
 "to other countries, and so they are become, in a more  
 "extended degree than heretofore, the carriers of our com-  
 "modities to foreign markets; that is to say, they supply those  
 "parts, which we, for want of industry have not embraced,  
 "or, where our traffic has been interrupted by the war. It is  
 "easy to prove, that for the last twenty years [he is writing  
 "in 1712] great parcels of our fine draperies and other woollen

\* Macpherson's *Annals of Commerce*, vol. 3, under the year 1715.

† Erasmus Philip's *State of the Nation*.

‡ Davenant's *First Report to the Commissioners of Public Accounts*.—Whitworth's *Edition of his Works*, vol. 5, p. 413.

“manufactures went into France, through Flanders, by the  
 “connivance of governors, and by the compositions with the  
 “French farmers (of customs) to the value (as I am well  
 “informed when in Holland about six years since) of nearly  
 “£300,000 per annum. Since the trade with the Spaniards  
 “has been interrupted, they must have carried of the same  
 “goods, great quantities to Portugal, otherwise how could  
 “they dispose of all the baize sent from hence to Holland,  
 “which article of baize from 1699 to 1704 amounts to, at a  
 “medium of the said five years, £92,526 per annum, and from  
 “Portugal it must have found its way to Spain and the West  
 “Indies. The same may be said of perpetuanas, serges, says,  
 “and other stuffs; as also of stockings, woollen, and worsted,  
 “for men, women, and children. During both the wars, not  
 “only the fine draperies, but manufactures from the long  
 “wool got into France from the frontier places, which turned  
 “to the profit of Holland; and of late years, since they have  
 “so much enlarged their traffic, and accumulated such a  
 “stock of wealth to support their trade, they have carried up  
 “the rivers into Germany great parcels of fine cloths, stuffs,  
 “says, and serges, which our merchants were wont formerly  
 “to export to Hamburgh and other parts of the German  
 “Empire upon their own account.”

Another very trustworthy writer\* also describes our Spanish trade in manufactures from wool.—It is apparent, that during the War of Succession, as it has been called, with a Bourbon on the Spanish throne, French fashions and commodities had the preference, and had displaced, to a great extent, our own goods.

The most beneficial trade, I take to be with Spain, which formerly took great quantities of our fine medley cloth, as well as stuffs, serges, druggets, bays, stockings, and other woollen manufactures; for which we had, in return, Spanish wool, used in the making such fine cloth; and likewise cochineal, indigo, campaches, annetto, logwood, and silvester. All of these are very necessary in dyeing wool and cloth for the market, besides other useful wares and merchandises, as bullion, pieces of eight, wine, &c. But since our late wars, this advantageous trade is very much declined, and 'tis to be feared will, in time, be wholly lost; for the

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\* Haynes' Great Britain's Glory, pp. 15 & 16, published in 1715.



Court of France has entered into contracts with them to supply them with various sorts of woollen manufactures, which before they were obliged to send to England for, and would still undoubtedly do so, were not our wool exported to France, insomuch that these two last years the manufactures exported thither from England, were a fifth part less than what were annually exported the four last years of the war. The French now make very great quantities of these manufactures, by having our wool, which otherwise would incapacitate them to make good cloth or fine stuffs. They likewise show their design of monopolizing our woollen trade to Spain, by endeavouring to engross the bullion and Spanish wool; from which we plainly perceive, how much it concerns us to preserve and promote our woollen manufactures, seeing our enemies exert their power and cunning to raise themselves by weakening us in the most sensible part.

Portugal, indeed, on the other hand, hath of late years taken greater quantities of our woollen manufactures than they did formerly, since we have had no commerce with France, in taking their wines.

In a scarce work published early this century,\* there is contained a list of worsted and other goods transmitted to the Spanish West Indies, from which the following items are extracted:—

FROM ENGLAND.

Mixt serges.	Black Hounscot says.
Long Ell broad perpetuanas.	Ditto white.
Long yards ditto.	Calicoes dyed.
Chenyes, printed and watered.	Worsted hose.
Colchester bays, dyed and white.	

FROM FLANDERS.

<i>Picotes</i> , a sort of woollen stuff.	<i>Lanillas</i> , white.
<i>Ditto</i> , half silk.	<i>Ditto</i> , black.
<i>Palometas</i> , all worsted.	<i>Baracanes</i> .
<i>Ditto</i> , half thread half worsted.	Hair camblets of Brussels.
Damasks, all worsted.	<i>Lamparillas</i> , half silk and
The same, half thread.	half worsted.
<i>Hounscots</i> of 3, 4, and 5 seals.	

\* “The Spanish rule of Trade to the West Indies, written in Spanish by De “Veita Linage, translated by John Stevens.” This list is given in the preface by the translator, who calls it a most excellent and complete list of all commodities transported to the Spanish West Indies, and states that he was favoured with it by persons of knowledge.

## FROM HOLLAND.

Black Leyden says.  
Serges in grain.

Black Delfe says.

## FROM FRANCE.

Only silk and linens.

## FROM ITALY.

Grograins of Messina.  
Hair camblets.

Mohair stuffs from Smyrna.

## FROM SPAIN.

Mixt serges of Ampudia.

From the odd names among the Flemish list, such of our manufacturers as delight in uncommon appellations for their stuffs, may obtain a choice selection of them. Chenyes were evidently a watered stuff.

The above named author, (Haynes) after animadverting upon the evils arising from our wool being clandestinely sent to France, in order to illustrate his position, gives us in detail the cost of manufacturing a pack of long wool into stuffs, which, when contrasted with the cost of the like process on a pack of short wool, exhibits most forcibly the fact that a very large number of people must have been employed in the worsted manufacture, and its national importance as a means of livelihood. He computed that a pack of short wool made into cloth, gave employment to sixty-three persons, whilst nearly five times that number were required to work up a pack of fine combing wool. The estimate which this ingenious writer produces of the price of labour of the latter artisans has before been quoted. See page 193.

“And here,” says he, “I cannot forbear taking notice of the number of people employed in working a pack, or two hundred and forty pound weight of wool, into stuffs for the Spanish trade. These stuffs are made of a longer and larger sort of wool than that is of which we make cloth, and commonly grows in Lincolnshire, Leicestershire, Northamptonshire, and Kent. To make such a pack of long combing wool into fine stuffs, serges, sagathies, calamancoes, &c.,

“ would, upon a moderate computation, employ for one week three hundred and two persons, who will earn £43 10s., thus :—

					£	s.	d.
7	Combers	..	..	..	3	10	0
	Dyeing..	..	..	..	5	0	0
250	Spinners	..	..	..	18	0	0
20	Throwers and Doublers	..	..	..	5	0	0
25	Weavers and Attendance	..	..	..	12	0	0
<hr/>					<hr/>		
302					£43	10	0
<hr/>					<hr/>		

“ Such a pack, if wrought into the finest stuffs, would employ double the number of hands, in the spinning and weaving especially.”

“ That there may be nothing wanting to illustrate the truth of what loss our poor do sustain in every branch of this trade, by the exportation of our wool, I will subjoin an estimate of the numbers employed in making a pack of wool into stockings for the trade aforementioned, together with what they can earn :—

					£	s.	d.
10	Combers will earn	..	..	..	5	5	0
	The Dyer	..	..	..	1	6	0
120	Spinners	..	..	..	15	0	0
12	Doublers and Throwers	..	..	..	4	10	0
60	Stocking Weavers	..	..	..	30	0	0
<hr/>					<hr/>		
202					£56	1	0
<hr/>					<hr/>		

“ Now if we suppose 1600 packs of such combing wool be clandestinely exported to France in one year, (although we have an account of a far greater number from some who have had to do in the owling trade) it is plain what a vast loss our poor have; and the advantages which foreigners reap by obtaining this staple commodity, will doubtless have very fatal consequences attending it, in reference to our foreign trade.”\*

More than once it has been stated, that Norwich, Exeter, Coventry, and Colchester, were the principal centres of the worsted business. We have at this period, from the pen of the celebrated De Foe, who personally visited about the year 1714 these places, and was a most accurate observer, a vivid description, of which the following are transcripts.—

“ When we come into Norfolk,” he remarks, “ we see a face of diligence spread over the whole country; the vast manufactures carried on chiefly by the Norwich weavers, employ all the country round in spinning yarn for them; besides many thousand packs of yarn, which they receive from other countries, even so far as Yorkshire and Westmoreland, of which I shall speak in its place.”

“ This side of Norfolk [that is the Suffolk side] is very populous, and thronged with great and spacious market towns, more and larger than any other part of

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\* Haynes' Great Britain's Glory, p.p. 8 & 9.



“England so far from London, except Devonshire, and the West-Riding of Yorkshire; for example, between the frontiers of Suffolk and the city of Norwich on this side, which is not above twenty-two miles in breadth, are the following market towns, viz :—

Thetford	Hingham	Harleston
Dis	West Deerham	East Deerham
Harling	Attleboro'	Watton
Bucknam	Windham	Loddon, &c.

“Most of these towns are very populous and large; but that which is most remarkable is, that the whole country round them is interspersed with villages, and those villages so large and so full of people, that they are equal to market towns in other counties, and render this eastern part of Norfolk exceeding full of inhabitants.”

“An eminent weaver of Norwich gave me a scheme of their trade on this occasion, by which, calculating from the number of looms at that time employed in the city of Norwich only, he made it appear very plain, that there were 120,000 people employed in the woollen and silk, and wool manufactures of that city only; not that the people all lived in the city, though Norwich is very large and populous, but they were employed for spinning the yarn used for such goods as were all made in that city.”

“This shows the wonderful extent of the Norwich manufacture, or stuff-weaving trade, by which so many thousand families are maintained.”

“This throng of villages continues through the east part of the country, which is the greatest extent, and where the manufacture is chiefly carried on: if any part of it be thin of inhabitants, it is the west part, drawing a line from about Brandon South to Walsingham North. This part of the country indeed is full of open plains, and somewhat sandy and barren, but yet feeds great flocks of good sheep. And put it altogether, the county of Norfolk has the most people in the least tract of land of any county in England, except about London and Exon, and the West-Riding of Yorkshire.”

“Add to this, there is no single county in England, except those I have mentioned, that can boast of three towns so populous, so rich, and so famous for trade and navigation, as in this county; to wit, the city of Norwich, and the towns of Yarmouth and Lynn.”

“Norwich is the capital of all the county, and the centre of all the trades and manufactures which I have just mentioned; an ancient, large, rich, and populous city. If a stranger was only to ride through, or view the city of Norwich on a common day, he would be induced to think there was a town without inhabitants, but, on the contrary, if he was to view the city either on a Sabbath day or on any public occasion, he would wonder where all the people could dwell, the multitude is so great. But the case is this; the inhabitants being all busy at their manufactures dwell in their garrets at their homes, and in their combing shops, as they call their twisting mills, and other workhouses, almost all the works they are employed at being done within doors.”\*

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\* De Foe's Tour through Great Britain, vol. 1. He mentions in his preface that seventeen journeys were undertaken to ensure accuracy. The Edition here quoted is that of 1738.

There are in this picture several notable features:—the “wonderful extent of the Norwich manufactures,” the exceeding populousness of the district, the bringing of much yarn then as now from Yorkshire, where it would employ large numbers in the spinning thereof; the striking industry and attention of the artisans to their work, not being found lounging and caballing in the streets. De Foe also corroborates a statement before made, that Norwich was a “City of Gardens,” exhibiting the tastes, and modes of recreation of its swarming inhabitants.

Turning again to the pages of De Foe, we have a graphic account of the trade of Exeter, the great centre of the serge manufacture. He narrates, that the serge market in this city, was the most surprising sight of the kind he had beheld, except the cloth market at Leeds, which is so graphically described in the pages of Thoresby.

“From hence we came to Exeter, a city famous for two things, which we seldom find united in the same town, viz.—that it is full of gentry and good company, and yet full of trade and manufactures also. The serge market held here every week, is well worth a stranger’s seeing, and next to the brigg-market at Leeds, in Yorkshire, is the greatest in England. The people assured me that at this market is generally sold from sixty to seventy, to eighty, and sometimes a hundred thousand pounds value in serges in a week. I think ’tis kept on Mondays.

“They have the river Ex or Esk here, a very considerable river, and principal in the whole county; and within three miles or thereabouts it receives ships of any ordinary burthen; the port there being called Topsham; but now by the application and at the expense of the citizens, the channel of the river is so widened, deepened, and cleansed from the shoal which would otherwise interrupt the navigation, that the ships come quite up to the city, and there with ease both to deliver and take in their lading.

“This city drives a very great correspondence with Holland, as also directly to Portugal, Spain, and Italy; shipping off vast quantities of their woollen manufactures, especially to Holland, the Dutch giving very large commissions here for the buying of serges, perpetuanas, and such goods which are made not only in and about Exeter, but at Crediton, Honiton, Culliton, St. Mary Autry, Newton Bushell, Ashburton, and especially at Tiverton, Cullumpton, Bampton, and all the north east part of the county; which part of the county is, as it may be said fully employed, the people made rich, and the poor that are properly so called, well subsisted and employed by it.”\*

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\* De Foe’s Tour through Great Britain, vol. 1, p. 323. It is mentioned that “serges and other goods were sent to Holland, from Exeter and Topsham, [the port for Exeter] in whole fleets.”

In addition to this information respecting the industrial pursuits at Exeter, there is inserted in the 'British Merchant,' a periodical of the time,—a letter dated 1713,\* emanating from some merchants of that city, which sheds considerable light on the quality of the serges and perpetuanas for which it was famous. "You must understand that there are four sorts  
"of serges made amongst us that are principally sold, the first  
"is a small sort of goods that contains about nineteen or nineteen and a half yards in a piece, and are sold at nineteen  
"shillings to twenty shillings and sixpence per piece; the next  
"sort holds about twenty-one yards, and are now sold from  
"twenty-five shillings to twenty-six shillings per piece; another  
"sort holds twenty-two yards, and are sold about thirty-one  
"shillings to thirty-two shillings per piece; but the very best  
"of all holds about twenty-two and a half yards to twenty-three yards, and are sold at thirty-six shillings per piece.  
"You must add to this price twenty-pence, for the dressing  
"of each piece, so the first sort will stand us to thirteen-pence  
"half-penny per yard; the next will stand us to sixteen-pence  
"per yard; the next sort which we call the best second, will  
"stand in about eighteen-pence per yard; and the best sort,  
"of all at about twenty-pence half-penny per yard."

"There are great quantities shipped off from our port, but  
"a much greater quantity of the sort from twenty-five shillings  
"to twenty-six shillings, than of all the other three sorts put  
"together; our markets (for price) have been the same for  
"several years past, and we believe you will not find any  
"material difference between our present prices, and the  
"prices in 1685."

"You must note, we have a great many sorts of perperets  
"and some of very ordinary wool—excluding the coarsest sorts,  
"we shall only mention the best made in two of our chief  
"manufacturing towns, that is Crediton, and Sandford; the  
"best Creditons are now worth about twenty-six shillings per  
"piece, and hold fifteen pounds weight, one with another;  
"the best Sandfords are now worth about twenty-nine shillings

\* British Merchant, vol. 1.



“and three-pence, and weigh about sixteen pounds and a half,  
 “one with another. You must add to this, twenty-pence per  
 “piece for dressing, but still this will not bring Crediton  
 “perpets above twenty-two pence farthing per pound, nor the  
 “Sandfords above twenty-three pence farthing per pound.”

Following De Foe to Coventry, he thus describes that place.

“Coventry is a large and populous city, *and drives a very great trade ; the manu-  
 “facture of tammies is their chief employ*, and next to that, the weaving of ribbons  
 “of the neatest kind, chiefly black. The buildings are very old, and in some places  
 “much decayed ; the timber built houses project forward, and towards one another,  
 “till in the narrow streets they are ready to touch one another at the top ; a method  
 “of building formerly much practised in London.—\* \* \* There are eleven  
 “churches in the city, but three of them are particular ornaments to it.”\*

He states that Colchester with the villages included in its liberty contained 40,000 inhabitants, and describes the Dutch Bay Hall there.†—Another tourist in 1722 gives the following account.

“This (Colchester) is the famous town in England, for bays, and says,—those  
 “stuffs, which we see the nuns and friars clothed with abroad, and of which the  
 “Spaniards carry such vast quantities to America. This manufacture employs all  
 “the neighbouring villages, some in carding, some in spinning,\* and others in  
 “weaving, and several credible factors assure me, that they return from London  
 “every week above £30,000 in ready money for these stuffs, besides what they  
 “transport themselves. During the war with Spain, no place suffered more than  
 “this, and many thousand people that were employed in this trade, were brought  
 “upon the charge of the parishes for want of business, but now the commerce is  
 “opened again with Spain this place will be very thriving.”§

There are two remarkable epochs of commerce in this century. The one dating from the accession of the House of Hanover to the throne of these realms, and the other from 1783. By comparing the exports and imports of four years

\* De Foe's Tour, vol. 1, p. 323.

† From an Act of Parliament passed in 1715, it appears that formerly the trade of making bays in Colchester was a free trade till by virtue of a bye-law, made in 1707, the same was restrained to persons serving their apprenticeship to bay-makers only, which bye-law it is stated had become very prejudicial to that branch of manufacture, and enabled the bay-makers to oppress their workmen.

§ From an Anonymous Work, entitled “A Journey through England in 1722.” vol. 1, p. 16.

of peace before the commencement of Queen Anne's reign, that is from 1698 to 1702, and of four years of peace afterwards, that is from 1714 to 1718, it will be found, that there is an amazing increase of nearly six millions,\* and in this spring the woollen and worsted industry participated. The rule of the Hanoverian dynasty has, in its policy, favoured the extension and prosperity of trade in all its branches. Among the statesmen of this kingdom, few stand in a prouder position, in a commercial point of view, than Sir Robert Walpole, whose opinions on commerce were just and enlightened when considered with respect to the age. Throughout his long administration, Norwich received from his hands, many marks of favour. For instance, to please the citizens of Norwich he greatly assisted them on the following occasion.

Like all prohibitory or restrictive laws attempting to divert the natural course of trade, and prevent the supply of commodities in demand, the statute (noticed at page 181) intended to prohibit the use in England of all calicoes painted, stained, or dyed in the East Indies, was speedily evaded. The taste for this kind of goods was so general, that to satisfy it, home printing in imitation of the East India patterns and colours, was commenced in earnest. A writer of the period thus alludes to the subject,—“Some whom we call drapers set all “their arts to work to evade the law of prohibition by employing people to imitate the more ingenious Indians, and “to legitimate the grievance, by making it a manufacture.”† Thus the advantages which the worsted weavers expected to reap from the above mentioned prohibitory statute were swept away, and there being, at this period, in the stuff trade much depression, a great outcry was made against the use of these home printed chintzes, which superseded wool woven fabrics of the realm. The evil is very graphically described in the following passage from one of the fugitive prints of the day. “The very weavers and sellers of calico “will acknowledge that all the mean people, the maid ser-

\* Clarke's Survey of the Strength and Opulence of Great Britain.

† The just Complaints of the poor Weavers truly represented.—*London*, 1719.

“vants, and indifferently poor persons who would otherwise  
 “clothe themselves, and were usually clothed in their women’s  
 “stuffs made at *Norwich and London*, or in *cantaloons* and  
 “crapes, &c., are now clothed in calico, or printed linen;  
 “moved to it as well for the cheapness, as the lightness of the  
 “cloth, and gaiety of the colours. The children universally,  
 “whose frocks and coats were all either made of tammies  
 “worked at Coventry, or of *striped thin stuffs* made at Spital-  
 “fields, appear now in printed calico or printed linen: let any  
 “but cast their eyes among the meaner sort playing in the  
 “streets, or of the better sort at boarding schools, and in our  
 “families: the truth is too plain to be denied.” Here we  
 have a clear indication that the wear of chintzes prevailed  
 among all classes. London had now become one of the  
 chief centres for the fabrication of slight worsted stuffs,  
 especially striped thin stuffs, which was carried on in Spital-  
 fields, where the French refugees had settled in great numbers  
 during the last century, and ever since, either more or less,  
 the making of these stuffs had formed part of their occupa-  
 tion.\*

The manufacturers of Norwich, at this date, the most  
 wealthy and powerful in the kingdom, and representing  
 then the enterprise and influence now possessed by Man-  
 chester in the affairs of the state, determined by the assistance  
 of the prime minister, to altogether repress the use, in Eng-  
 land, of calicoes printed either at home or abroad. In this  
 endeavour, the aid of the whole of the population employed  
 in the working-up of wool joined; numerous petitions were  
 presented to Parliament; complaints were loudly uttered that  
 the national interests were in danger;† and finally the Legis-  
 lature decreed that, after the 25th of December, 1722, none

\* In a Pamphlet published in 1674, “The True English Interest, an Account of the Chief National Improvements,” it is stated that in Spitalfields and some suburbs of London, the making of all sorts of stuffs, silks, satins, and velvets, had arrived at great perfection.

† Among the host of Pamphlets issued against the use of printed calicoes, there is one entitled “The Weavers’ True Case, or, the wearing of Printed Calicoes and Linen destructive of the Woollen and Silk Manufacture,” written by a practical weaver, containing the following estimate:—One hundred stuff weavers employ



should wear in Great Britain any printed, painted, or stained calico, under a penalty of five pounds, and that after this time, no such calico should be used as furniture. An exception was made in favour of muslins, neckcloths, and fustians.\*

Another measure for the benefit of Norwich was obtained through the favour of Sir Robert Walpole. On several occasions previously, it has been mentioned that the manufactures of Norwich were under the government of two companies: the one of the Worsted Wardens first constituted by statute in the time of Henry VI., remodelled in the days of Edward IV., and again during the reign of Charles II.; the other the Russel Company originating in the year 1554. We are informed by Roberts, in his ‘Merchant’s Map of Commerce,’ that those manufactures under the government of the Worsted Company, and approved by the wardens, had a seal affixed to each end thereof, the one seal having the word *Norwich* on one side, and certain letters on the other which stood for such

almost eleven hundred other people, which makes altogether about twelve hundred hands for one hundred looms, namely, 1200lbs. of wool for one week’s work employs —

Of Weavers .. ..	100	Bobbin Winders .. ..	12
Wool Sorters .. ..	4	Back throw Winders.. ..	12
Wool Pickers .. ..	10	Quill Boys .. ..	50
Wool Combers .. ..	20	Warpers .. ..	5
Spinners .. ..	900	Dyers .. ..	6
Throwers .. ..	4	Pressers .. ..	6
Turners of the Throwing Mill	4		
Thread Makers .. ..	4		1187
Doublers .. ..	50		

“The price of the workmanship for 12lbs. of wool:—

	£	s.	d.		£	s.	d.
Wool Sorting ..	0	0	3	Warping .. ..	0	0	6
Wool Picking ..	0	0	8	Weaving .. ..	0	12	0
Wool Combing ..	0	2	0	Calendering .	0	0	6
Spinning .. ..	1	4	0	Pressing .. ..	0	1	6
Throwing .. ..	0	4	0				
Dyeing .. ..	0	4	0		2	10	5
Winding .. ..	0	1	0				

“These 12lbs. of wool manufactured into woollen stuffs is the week’s work for “one of these looms and its dependants.”

\* “An Act to preserve and encourage the Woollen Manufacture, &c.” 7 Geo. chap. 7.

of the wardens' names as were present at the sealing thereof; the other seal had, on the one side, these words *Worsted reformed*, and on the other side thereof, in figures, the quantity of yards the piece contained. Those manufactures under the government of the Russel Company and approved by them, had but one seal, which had on one side the representation of a castle, and on the other side these words *Fidelitas artes alit*. Before, however, the year 1723,\* but at what exact time cannot be ascertained, the making of russels, &c., had been discontinued. Many weavers of divers sorts of worsted which had come into vogue, set up their trade in Norwich without having obtained the freedom of the city, whereby many evils arose; and the number of freemen had much diminished. Likewise, it was alleged, that the supply of magistrates was inadequate. Therefore, through the favour of Sir Robert Walpole, an Act of Parliament was obtained "for the better qualifying the manufacturers of "stuffs or yarns in the city of Norwich, and liberties thereof, "to bear offices of magistracy in the said city, and for regulating the election of such officers." In this statute, after reciting, that

Anciently the chief manufactures of that city were russels, sattens, sattens reverses, and fustians, and the makers thereof, by the 1 & 2 of Philip & Mary, chap. 14., were obliged to become freemen of the said city; by means whereof there was a constant supply of able magistrates, and great good did accrue to the said city in many respects, but the said manufactures having been disused for several years past, and others introduced in their stead, the good designs of the said act were lost; it is therefore enacted, that all makers of stuffs made of wool, or wherein there is any mixture of wool, and all makers of worsted into yarn, (who are not journeymen or servants,) master-weavers, or master wool-combers, and all persons dealing, or employing servants and journeymen in such manufactures, living in Norwich, shall on their request, at any assembly of the Corporation, be made free of the city, paying not exceeding £5.

If any person, (except servants and apprentices,) who shall be any such manufacturer or dealer, &c., shall exercise any of the said manufactures, not being made free, and being convicted on a prosecution, commenced within six months after the fact, he shall forfeit £10 for every calendar month after the third quarterly assembly of the Corporation, to be recovered by action of debt, &c., brought by the chamberlain for the use of the city.†

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\* In "Robert's Merchants' Map of Commerce," Fourth Edition, London, 1700, these particulars are given.

† Stat. 9 Geo. chap. 9.

In consequence of the general wear of chintzes, which, as will immediately be seen, was not prevented by the late 'Calico Act,' because of the substitution of printed fustians so as to resemble chintz calicoes, the home consumption of worsted still continued to decline; but the loss was, to some extent, compensated by the increase of our exports of products from wool. From the year 1717, these had, on the whole, considerably increased, as the following tabular statement will sufficiently indicate.—

						£
In 1718 the export of products from wool were						2,673,696
1719	..	..	..	..	..	2,730,297
1720	..	..	..	..	..	3,059,049
1721	..	..	..	..	..	2,903,310
1722	..	..	..	..	..	3,384,842
1723	..	..	..	..	..	2,920,601
1724	..	..	..	..	..	3,068,373

Owing to the plague in France in 1720, our exports of woollens and worsted increased to a great extent, supplying those markets which the French had procured. Of the above amounts, one is warranted in assuming, that a great proportion consisted of worsted goods. In 1712-13-14, it was so, as before observed; and it is incontrovertible that the woollen branch had since decreased; but not so the worsted. To aid the silk and worsted manufacture, and to encourage the fabrication of mixed goods of these materials, the legislature offered a bounty of sixpence for each pound weight upon the export of all stuffs made in Great Britain of silk and worsted,\* and eightpence for each pound weight of stuffs made of silk and grogram yarn. This measure gave a stimulus to the Norwich and London trade, of which these mixed fabrics constituted a large portion. The manufacture of crapes at Norwich was also much encouraged. These were, for their excellence, to contradistinguish them from others, termed 'Norwich' crapes, and orders being issued for the court mourning to be in that material, occasioned it

\* Stat. 9 Geo. chap. 8.



to be in general use throughout the land. It is singular for what a length of time this ungraceful article retained, through the royal favour, a hold on the fashions of the people. It was through the intervention of Sir Robert Walpole, and during his administration, that the order was made that court mourning should consist of these crapes.\* For having promoted the trade of the city, he was, in the year 1733, made a freeman of Norwich. The principal market for Norwich stuffs was at home, but they were also shipped abroad in large quantities at this period, principally to Germany. The East India Company purchased of them to a considerable amount. Altogether, the trade of Norwich, during the first half of the last century, appears to have suffered less in proportion to its extent, from the panics and depressions of that interval, than any other seat of the worsted industry. On the contrary, the worsted weavers of London seem to have felt with great severity these depressions.

Among the causes which conspired to injure our trade, was the competition of the Scotch worsted weavers, who now carried on business upon an extensive scale, and not only supplied themselves with many articles before woven in England, but also carried them to the foreign markets.†

\* "The [Norwich] trade in worsted stuffs was principally confined to home consumption, and the Act of 1721, which prohibited the general wearing of *cottons*, and the order for the Court mourning to consist of Norwich crapes, during the administration of Sir Robert Walpole, combine to prove that the trade did not depend so much on foreign demand, as upon internal orders."—*Beauties of England*. (The chief compiler of this work was the venerable John Britton, so well known for his works, and to whom I owe some obligations.)

† From a Pamphlet published at Edinburgh in 1735, 'The Interest of Scotland considered,' the following Extract is taken :—

"At Kilmarnock are made of our own wool, low priced serges known by the name of that place where they are made. They are partly for home consumption, and partly for the markets of Holland, and by the help of a little care and encouragement, burying crapes, at least those of a low price, might also be made there for home consumption. At Stirling and its neighbourhood, large quantities of serges are made, and several other low priced woollen goods, for furniture, all for home consumption, and rather cheaper than such goods can be purchased in England. This business, by the care and vigilance of the justices of the peace in those parts has much improved of late. At Aberdeen and countries adjacent, large quantities of our own coarse tarred wool are manufactured into coarse serges called fingrams,

Some of our American plantations also took much less of our manufactures from wool. Ireland, in the article of worsteds, had likewise much increased the amount of long or combing wool which she worked up at home. In the year 1736, England exported to Ireland the following:—

		MEDIUM OF THE CURRENT PRICES.			TOTAL.		
		s.	d.		£	s.	d.
Old drapery, per yard	..	15	0	..	10,827	3	8
New ditto	..	2	6	..	2,293	19	0
Prunella	..	3	6	..	450	0	6
Shags	..	4	0	..	122	6	2*

The worsteds, it will be observed, were very small in quantity, but the prices rate high.

Ever since the passing of the Calico Act in the year 1721, a struggle had been maintained between Manchester and Norwich, and henceforward it continued for many years. The manufacturers of the former had, to a great extent, frustrated the intention of that statute, by new articles of manufacture, so as to resemble in some respects the ancient fustians, which it will be remembered were along with muslins and neckcloths excepted from the operation of that act. These fustians and their imitations, made in various methods of linen and cotton mixed, and printed so as to resemble East India prints, had come into great vogue. The ‘Manchester men’ having with the increase of their town and trade risen into importance and wealth, had now sufficient influence in the councils of the nation, to obtain in their favour, a statute for the purpose of settling controversies and doubts, (which

“and knit stockings of all prices. Some of these goods are consumed at home, and  
 “some of them exported to Holland, and some of them sold at London, and from  
 “thence are exported to foreign parts. At Edinburgh, fine shalloons are made of  
 “our best wool for home consumption, and *cheaper than they can be had in England.*  
 “At Musselburgh, there is a considerable manufacture of low priced narrow goods,  
 “from thence called Musselburgh stuffs for home consumption, and export to the  
 “Plantations.” The writer then proceeds to show that there also existed in Scotland a considerable manufacture of cloths. Enough has been extracted to convince that the worsted trade was thriving and extending there.

\* “Essays of the Dublin Society,” published in Dublin, 1740.

affected the prosperity of the trade,) as to whether those fustian stuffs, when printed, were in accordance with the laws of the realm.\* Accordingly in the year 1736, what was termed the ‘Manchester Act’ was obtained, and hence we may date, the first great instance of the power of that town in the senate, which has been so remarkably developed in modern times. This act recites, that great quantities of stuffs made of linen yarn and cotton wool had for several years past been manufactured, printed, and painted in Great Britain, which manufacture *so printed and painted was a branch of the ancient fustian manufacture of the kingdom*, and had been, and were then used and worn in apparel and furniture: and enacts, that there should be no prohibition of stuffs made of linen warp and cotton weft, manufactured and printed in Great Britain.† Inasmuch as the making of such kinds of stuffs had been carried to that perfection as to closely resemble calicoes, henceforward the laws obtained by the worsted weavers against their use were nugatory. Printed linens and these mixed goods (under the name of fustians) speedily became the fashion, and rapidly extended. They were termed ‘English chintzes’ and received even the countenance of the royal family,‡ much to the chagrin of the producers of wool and the manufacturers thereof, who deemed the interest of the nation thereby in danger. Norwich now

\* The following may be taken as an illustration of the prosperity of Manchester and spread of the cotton trade. “The manufacture of cotton, mixed and plain, is arrived to so great perfection within these twenty years, that we not only make enough for our own consumption, but supply our Colonies, and many other nations of Europe. The benefits arising from this branch are such as to enable the manufacturers of Manchester alone to lay out thirty thousand pounds a year for many years past on additional buildings. ’Tis computed that two thousand new houses have been built in that industrious town, within these twenty years.” Extracted from a Pamphlet, published in 1739, entitled “The late Improvements in Trade, &c., considered.”

† Manchester Act, 9 Geo. II., chap. 4.

‡ “Mr. Sedgwick, a very considerable trader in printed goods, had the honour to present to Her Royal Highness the Princess of Wales, a piece of English chintz, of excellent workmanship, printed on a British cotton [that is of linen warp and cotton weft] which being of our own manufacture, her Royal Highness was most graciously pleased to accept of.” Her Royal Highness added, that it was preferable to any Indian chintz whatsoever. *Gentleman’s Magazine*, March, 1754.



seeing that the competition of Manchester could no longer be shackled, with laudable enterprise determined to commence the cotton business. There was then in that city a committee of trade, which in its functions resembled the modern chamber of commerce, and this committee at one of their meetings passed a resolution for encouraging this new manufacture.\* But though attempted, it altogether failed, and exhibited another instance that certain districts are, owing to many local circumstances, peculiarly adapted for the most advantageous carrying on of particular branches of trade. The extended use of printed linens and mixed goods had a serious effect upon the woollen and worsted artisans, for although there was no falling off, but the contrary, an increase in the export trade of their products; yet their numbers increasing more in proportion, a slight decay in the demand for the home market very sensibly affected their position, and the consequence was they rose in various places in a riotous manner. One of their causes of complaint was the extensive adoption of the truck system of paying wages, which the legislature of our day has wisely abolished.

The notices of the worsted department of industry are, at this period, mostly to be gathered from the fugitive pamphlets of the day, written to uphold partial and prejudiced views, being on the whole not entitled to much credit, and only to be quoted with care, and the extracts from them read with caution. There is, however, in a pamphlet, published in 1739, from the pen of a Northamptonshire worsted manufacturer,

\* Resolution of the Committee of Trade of Norwich, since the passing of the Act for allowing the wear of stuffs made of linen yarn and cotton wool, printed or painted, manufactured in Great Britain, provided the warp be entirely linen yarn. :—  
 “Experiment having been made by some of the principal woollen manufacturers  
 “of this city, of cotton yarn spun here it is very probable, if they proceed on that  
 “manufacture, that this city will be as famous for cotton, as it is for worsted  
 “stuffs:—Resolved therefore, that a subscription be made for raising a sum of  
 “money to be given to such person as shall produce to the Committee of Trade, at the  
 “Guildhall in this city, on Midsummer day next, the best piece of stuff twenty  
 “yards long, and one broad, weaved of cotton wool, and linen yarn, within this  
 “city; and to encourage workmen to excel in weaving cotton stuffs, Resolved,  
 “that a guinea be given to the journeyman, or person who shall weave the piece so  
 “judged the best, as aforesaid.” *Gentleman’s Magazine*, March, 1736, p. 169.

(probably residing at Kettering)\* a valuable and faithful account of the qualities of English and Irish combing wool; where chiefly grown—a list of articles made from it—and the trades and occupations dependent upon its manufacture. The information thus disclosed, is of that kind which could be furnished by no party so well as one personally engaged in the process. His object is to draw attention to the great importance of preventing the smuggling of our wool abroad.

He first commences with a description of foreign combing wool, and then treats of English and Irish wool. It will readily occur to the reader of his observations, that the ancient peculiar excellence of Norfolk wool for making worsted fabrics, had been lost since the time of Henry VIII.; and that the material obtained from some particular spots in Leicestershire and Lincolnshire, was accounted the longest and finest, and of which were made the choicest Norwich goods. The good quality of Irish combing wool, chiefly worked up in England, explains why such an outcry was raised against its exportation.

“Our long combing wool,” he observes, “is the sort of wool our rivals [the French] covet most. The wool of France is for the most part very coarse and short, in general not above three or four inches long, and of a harsh sour nature, and great part of it has a stichel hair in it. There is a little long wool that is grown in North Holland, and Louvain in Flanders, but this is not fine like the wool of England and Ireland. The combing wool of England and Ireland is fine and long, free from this stichel hair, and the natural strength of it makes it valuable, as well as the softness and fineness of it; and the manufactures of stuffs and stockings made thereof, are preferable for goodness and beauty to any goods that they can make of their own wool, either in France, Flanders, or Holland, even as our stuffs of the finest quality, that are made of the best and finest wool, surpass the goods of the coarsest wool. The wool of Warwickshire, Northamptonshire, Lincolnshire, and Rutland, with some parts of Huntingdon, Bedford, Buckinghamshire, and Cambridgeshire, and Romney Marsh, with some parts of Norfolk, have been accounted the longest and finest combing wool. But of late years there have improvements been made in the breed of sheep, by changing of rams and sowing of turnips, grass seeds, &c., and now there is some large fine combing wool to be found in most of the counties of England, which is fine, long, and soft, fit to make all sorts of fine stuffs.” He then proceeds—“The

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\* ‘Observations on Wool and the Woollen Manufacture, by a Manufacturer of Northamptonshire.’ Second Edition, London, 1739.

“combing wool of Ireland grows mostly in the counties of Tipperary, Limerick, Kilkenny, Kerry, Waterford, Connaught, and Cork, and is no way inferior to the long wool of England, except a small quantity of wool that grows in some parts of Leicester, and the south marshes of Lincolnshire, which is longer than any wool growed in any part of England besides; and is of a beautiful shining colour, and although long yet very fine and soft, and is chiefly used in making of the best sorts of Norwich crapes, bombasines, &c., which when wrought into these sort of goods, is not only very fine, but bears an exceeding good gloss, superior to any of the wool of Ireland; but for the rest of the wool that is used in combing in England, it is so near the length, strength, and fineness, that when compared with Irish long wool, there is no one when he sees it abroad can tell whether it be English or Irish wool.”

Having thus shewn the superiority of our combing wool, and its value in the hands of our foreign rivals, he gives a very exact list of articles made in England wholly or in part from this combing wool, which apparently exhibits every species of goods thus fabricated. It is, undoubtedly, the most comprehensive enumeration of them, that up to the middle of the eighteenth century is extant. Although some of these are, it is evident, merely small wares, haberdashery woven in the Dutch loom engine, lately introduced, yet a very numerous array remains of those which are legitimately worsted stuff pieces, many of them forming part of our staple manufactures at this day. He shews what sorts of goods are made of combing wool; what sorts are made of combing wool and carding wool mixed together; and what mixed with silk, cotton, and linen, &c.

#### *Of combing wool.*

Says.	Serges.	Camblettees.
Borsleys.	Sagathies.	Calimancoe plain.
Shalloons.	Duroys.	Calimancoe flowered.
Spanish crapes.	Durants.	Damasks.
Buring crapes.	Ranthers.	Russets.
Tamys.	Buntings.	Everlastings.
Purnellows.	Boulting cloths.	Cantiloons.
Sattannets.	Swathing bands.	Worsted plush.
Harrateens.	Serge denim.	Quarter diamond.
Cheneys:	Camblets.	Bird's Eye diamond.



Grogram.	Gartering.	Caps.
Paragon.	Quality binding.	Gloves.
Cadis.	Stockings.	Breeches knit.

With many other sorts of plain and figured stuffs.

Of *combing wool* and *carding wool* mixed together; the combing the warp or web; the carding the woof or shoot, viz:—

Bays.	Long ells.	Swan skin.
Broad rash.	Druggets plain.	Swinco bays or wadding.
Cloth serge.	Druggets corded.	Perpetuanas.
German serge.	Flannel.	

Of long wool and silk, mohair, and cotton, mixed, viz:—

Norwich crapes.	Stockings.	Alapeens.
Silk druggets.	Spanish poplins.	Anterines.
Hair plush.	Caps and gloves.	Silk sattenets.
Hair camblet.	Venetian poplins.	Bombasines.

“And divers sorts of different stuffs, both figured, clouded, “spotted, plain, and striped, too tedious to name; but what I “have set down are sufficient to prove the valuableness of the “combing wool.”

As it was desirable to obtain information respecting the kinds of fabric these goods were, several works of standard authority, at or about this date, have been consulted, but without much success. The only descriptions found worthy of extraction are those of says, sagathies, and camblets, in Chambers’ Cyclopædia, which convey some particulars respecting the manner of their manufacture. These descriptions are subjoined:—

“*Say* or *saye*, a kind of serge, or a very light crossed stuff, all wool; much used “abroad for linings, and by the religious for shirts; with us by the Quakers for “aprons, for which purpose it is usually dyed green. There are very considerable “manufactures hereof at Sudbury, near Colchester; also at Ypres, Houdscot, &c., “in Flanders, &c. Those made in England are chiefly exported to Portugal and “Leghorn.”

*Sagathee*, a slight woollen stuff; being a kind of serge or ratten, sometimes mixed with a little silk. It is manufactured chiefly at Amiens, though we have our share of it in England. The word is formed from the French, *sayette*, a diminutive of *saye*, *say*.

*Camblet*, or *chamblet*, a stuff sometimes of wool, sometimes silk, and sometimes hair, especially that of goats, with wool or silk; in some the warp is silk and wool twisted together, and the woof hair.

The true or Oriental camblet is made of the fine hair of a sort of goat frequent about Angora, and which makes the riches of that city, all the inhabitants thereof are employed in the manufacture; England, France, Holland, and Flanders, are the chief places of this manufacture. Brussels exceeds them all in the beauty and quality of its camblets, those of England are reputed the second.

Figured camblets, are those of one colour, whereon are stamped various figures, flowers, foliages, &c., by means of hot irons, which are a kind of moulds pressed together with the stuff under a press. These are chiefly brought from Amiens and Flanders, the commerce was anciently much more considerable than at present.

Water camblets, those which after weaving receive a certain preparation with water, and are afterwards passed under a hot press, which gives them a smoothness and lustre.

Waved camblets, are those whereon waves are impressed, as on tabbies, by means of a calender,\* under which they are passed and repassed several times.

The manufacturers, &c., of camblets are to take care that they do not acquire any false or needless plaits, it being almost impossible to get them out again. This is notorious even to a proverb. We say, a person is *like camblet*, *he has taken his plait*.—Chambers' Cyclopædia, edit. 1731.

Shalloons were fabricated in a similar manner as at present, with single warp and twilled. Likewise tammies were also of single warp and twilled, but there were some varieties of them: the 'durants,' mentioned above were, it seems, a coarser and more durable kind. Prunellas were a sort of lasting. Dr. Johnson defines them as a kind of stuff of which clergymen's gowns were made. Ladies' boots were also at this period made thereof. Bunting is a stuff of which the colours and signals of ships are usually made. Serge *denim* is evidently a corruption of 'serge de Nismes,' which along with 'serge de Berry' was an imitation of French stuffs of that name,

\* Calender, a machine used in the manufactories for pressing certain stuffs, silks, and even linens, to make them smooth, even, and glossy; it is also used for giving the waves to tabbies and mohairs.

The calender consists of two large wooden rollers, round which the pieces of stuff are wound: these are put between two large close polished planks of wood, the lower serving as a fixed box, and the upper moveable by means of a screw like that of a crane, with a rope fastened to a spindle, which makes its axis. This upper part is of prodigious weight, sometimes fifty or sixty thousand pounds. It is this weight that gives the polish, and makes the waves on the stuffs about the rollers, by means of a shallow indenture or engraving cut in it. The rollers are taken off and put on again by inclining the machine.—Chambers' Cyclopædia, 1751.

and were now extensively made in England. Calimancoes were made of various kinds. Some quite plain, others with broad stripes adorned with flowers. They were now, as up to a late period, like shalloons, an important item in our manufactures. It is hazardous to offer an opinion as to what particular kinds of fabric, some of the other numerous and miscellaneous articles belonged. 'Buring' crapes, it is presumed, were burying or funeral crapes. Chambers describes crape as "a slight transparent stuff in the manner of gauze. "Crapes are either craped, that is crimped, or smooth; the "first double, expressing a closer mourning; the latter single "used for the less deep." 'Duroys' were used for gentlemen's apparel, and 'cantiloons' formed ladies' dresses. The 'Cantaloune' (a single camblet) mentioned at page 144, seems to have been the same description of goods. On reference to the same page, the reader will also find a stuff termed 'paragon,' made in the days of James I., and that it was a species of double camblet. But in what peculiar method they were fabricated the author has not discovered. The like may be said of 'chenecys', a watered stuff; sattanets, harrateens, ranters, &c.

Damasks would be similar to those of our present manufacture. The term russet appears to be a corruption of russel, an ancient kind of stuff which still retains a place in our present worsted nomenclature. Everlastings were the same as the lastings of our day. The like of grograms. Boulting cloths, for sifting meal, are enumerated, and are an example of the minuteness with which the list is filled up.

As to the second class of goods partly worsted and partly woollen: baize had, with long ells, become part of the manufactures of Yorkshire. Druggets plain and corded, were made at Wilton, where the making of carpeting formed the staple trade of the place. There were two kinds of serges; the one worsted; the other cloth serge, and milled. Rash was a heavy sort of goods used for coatings. Perpetuanas have often before been alluded to. They were along with serges chiefly made in the neighbourhood of Exeter.

The mixed stuffs in the third class were mostly Norwich and London fabrics. Hair camblets were manufactured, as the



original camblet was, of goat's hair, brought in yarn from the Levant. The different kinds of poplin were, it is presumed, made of worsted and silk as at present, but of what consisted the distinction between the Spanish and Venetian sort cannot be explained. Sattenets were of Spitalfield's make, and bombasines the peculiar manufacture of Norwich. What were *alapeens* and *anterines*?

After shewing the value of our long wool, and the numerous articles made from it, he proceeds to specify the various classes of people who either directly or indirectly gained their subsistence from the manufacture. From the lengthy list he exhibits, the following are drawn out, because they illustrate the processes of worsted making at this date.

Bobbin winder.	Spinner of worsted or gersey.
Bay maker.	Scourer of stuffs, tammies, &c.
Calender.	Sizer of chains.
Camlet maker.	Say maker.
Crape maker.	Shalloon maker.
Comber.	Serge maker, mixt.
Doubler.	Sorter of wool.
Dyer.	Tammy maker.
Duroy and sagathy maker.	Warper of chains.
Enterer of chains.	Weaver of serge, shalloons, &c.
Factor of yarn.	Weaver of calimancoes, &c.
Merchants.	Weaver of crape.
Pickers of wool.	Woolstapler.
Pickers of pieces of callimanco,	Wooljobbers.
&c.	Waste or thrumb dealers.
Pressers.	Waterers of cheyneys, &c.
Packers.	Yarn or worsted maker.
Pattern reader for draughtwork	Yarn factors.

The author concludes his most interesting and well written 'observations,' by describing the continental seats of the manufacture, many of which he had visited, and his position as a manufacturer, renders the description exceedingly trustworthy and instructive.

Another writer also of the time, in a pamphlet, entitled ‘A Short Essay upon Trade in general,’ affords us much information respecting the state of the worsted manufacture, and gives some estimates and calculations of the extent and value of that important trade.\* He remarks on the changes which had occurred in it from the variation of fashions. He states that formerly “Taunton serges were much worn by women, “but in a short time Norwich *toys* took place for that sex, and “became their wear; after this, the French refugees introduced various manufactures before but little known amongst “us, made of silk and worsted, and silk and thread,” which being gay colours superseded the old fabrics. He also alludes, to the removal of the manufacture from its former seats to others, in this manner:—

“I remember in my time the rise of some towns, and the “fall of others, in that manufactory, viz:—*Sudbury*, and, “I think, *Farnham*, were famous for making shalloons, as “was also *Newbury*.” \* \* “Then Kettering a little “market town in Northamptonshire, from manufacturing “twenty or thirty pieces of dyed serges weekly, fell into “making shalloons, rivalled the towns above mentioned, and “sent to London market upwards of one thousand pieces per “week.” He proceeds, “Yorkshire hath rivalled them since, “by *underworking them*, and very much decreased their “trade, as also lowered their prices; they have also robbed “the east and west; for I am told they not only make long “ells, but bays in imitation of *Bocking bays*, and sell them “much cheaper for the reasons aforesaid, and none can say “they have not an equal right to manufacture those goods

\* “A Short Essay upon Trade in general, &c., by a Lover of his Country and the Constitution of Great Britain.”—London, 1741. This was a reply to pamphlets published at the time, one by Samuel Webber, printed in 1739, under the title of a “A Short Account of the State of our Woollen Manufactures, from the “Peace of Ryswick, (1697,) to this time, (1739,) their former flourishing and their “present ruinous condition, shewing that they always flourished when France could “not get our wool, but declined in proportion to the quantities of our wool exported;” another to the same effect, entitled “The Consequences of Trade, &c., and of the “Woollen Trade in particular, by a Draper of London,” 1740. A person of the name of London, next year also appeared on the same side, in his “Answer to pretended remarks on Mr. Webber’s scheme.”

“with Bocking or Exeter. I could mention various others  
“in like circumstances.”

Afterwards he gives a very graphic account of the Combers' Combinations and their power capriciously exercised over their employers, which reminds one of the proceedings of the Combers Trades' Union, in 1825, at Bradford, under the leadership of the well-known Tester. Writing in 1741, here are the words of the author now under quotation.

“Our combers have for a number of years past, erected  
“themselves into a sort of corporation (tho' without a charter),  
“their first pretence was to take care of their poor brethren  
“that should fall sick, or be out of work ; and this was done  
“by meeting once or twice a week, and each of them contri-  
“buting two-pence or three-pence towards the box to make a  
“bank, and when they became a little formidable, they gave  
“laws to their masters, as also to themselves, viz :—that no  
“man should comb wool under two shillings per dozen ; that  
“no master should employ any comber that was not of their  
“club, if he did, they agreed one and all not to work for  
“him ; and if he had employed twenty, they all of them  
“turned-out, and often times were not satisfied with that,  
“but would abuse the honest man that would labour, and in  
“a riotous manner beat him, break his comb-pots, and destroy  
“his working tools ; they further support one another, inso-  
“much that they are become one society throughout the  
“kingdom. And that they may keep up their price, to en-  
“courage idleness rather than labour, if any one of their  
“club is out of work, they give him a ticket and money to seek  
“for work at the next town where a box club is, where he is  
“also subsisted, suffered to live a certain time with them, and  
“then used as before ; by which means he can travel the king-  
“dom round, be caressed at each club, and not spend a farthing  
“of his own, or strike one stroke of work. This hath been  
“imitated by the weavers also, though not carried through the  
“kingdom, but confined to the places where they work.”

He then commences an estimate or calculation of the value of manufactures from wool, especially combing wool, which appears to be made with considerable care. The data upon



which it is founded, will be scrutinized hereafter, in order to discover how far the results drawn from them may be trusted. He takes as the base of his estimate, that, judging from the number of sheep slaughtered in London, and from other reasons, there are 16,640,000 sheep in Great Britain, which at three pounds and a half per fleece, and adding ten per cent for lamb and fell wool, make, at two-hundred and forty pounds per pack, 266,933 packs yearly.

As to wool of our own growth, I have admitted it to be 267,000 packs growing in Great Britain, and 100,000 for Ireland, together 367,000, and wish they may prove so many; for I confess that I am in opinion I have made too high an allowance, because I would not be thought to lessen our growth;\* for the same reason Webber gave why he would not put labour too high.

From the 367,000 packs of wool growing in the fleece, I deduct five per cent for winding, which is 18,350, and reduceth the whole to 348,650 packs; of which 190,000 is sold as combing wool, from which in sorting is cast out unfit for combing one-fifth, namely, 38,000, by which combing wool is reduced to 152,000 packs, which in washing and combing wastes about one-fourth, namely, 38,000, so that the combed wool manufactured will be 114,000 packs.

The clothing wool, which after winding, &c., is 158,650 packs, to which I must add thrown from the combing as unfit for that business 38,000 packs, so then the clothing wool will be 196,650. To which I must also add noyles that's taken from the combed wool one-eighth, which is 14,250, makes the clothing to be 210,900 packs, from which I must deduct one-fourth for waste, 52,725, that reduceth it to 158,175 packs.

These wools are cast into various sorts \* \* \*

As to combed wool, I throw it into four sorts, as will be shewn after. I have made the several deductions as follows, and give for labour £6 per head per annum, which I think is full as much as is earned one with another, there being many children employed.

He then gives a detailed account of the manufactures from this *sorted* clothing and combing wool, as follows:—

\* At page 37, he observes, "I could produce other demonstrative reasons that we do not grow more, if so much wool, as I have calculated for Great Britain; for I have been at various times at the greatest fairs for wool in these dominions, more especially for the sort of wool they write about, namely, *Bristol* and *Stirbitch*, [Stourbridge;] at the last of which there was usually a meeting of the most considerable dealers in that commodity from Norfolk, Suffolk, Essex, Hertfordshire, Cambridgeshire, Yorkshire, Lincolnshire, Northamptonshire, and some from Warwickshire, Buckinghamshire, Bedford, Huntingdon, and the Isle of Ely; some to buy large combing wool for making worsted yarn, for the stuff and bay trade; others to sell their small wool for the Yorkshire trade, and never heard the quantity at any fair to exceed 5,000 packs."

I begin my calculation with clothing wool, viz :—

PACKS.	CLOTHING WOOL.	£	NO. OF HANDS.	WOOL & LABOUR.
158,175	of Wool at £8 per pack Labour at 16 „	1,265,400 2,530,800 <hr/> 3,796,200	421,800	£ 3,796,200
COMBING WOOL.—114,000 PACKS.				
3,000	for Stockings at £14 per pack Labour at 80 „	42,000 240,000 <hr/> 282,000	40,000	282,000
2,000	Ditto at 12 „ Labour at 60 „	24,000 120,000 <hr/> 144,000	20,000	144,000
12,000	for <i>Norwich</i> at 10 „ Labour at 50 „	120,000 600,000 <hr/> 720,000	100,000	720,000
4,000	for cloths serges, } druggets, and 3 } 10 „ times combing } Labour at 30 „	40,000 120,000 <hr/> 160,000	20,000	160,000
3,000	for <i>London</i> at 10 „ Labour at 50 „	30,000 150,000 <hr/> 180,000	25,000	180,000
6,000	for country } made stuffs } 9 „ Labour at 32 „	54,000 192,000 <hr/> 246,000	32,000	246,000
26,000	Ditto at 8 „ Labour at 28 „	208,000 728,000 <hr/> 936,000	121,333	936,000
30,000	Ditto at 7 „ Labour at 22 „	210,000 660,000 <hr/> 870,000	110,000	870,000
28,000	Ditto at 6 „ Labour at 16 „	168,000 448,000 <hr/> 616,000	74,666	616,000
272,175	Labour £5,788,800		964,799	£7,950,200

N.B. I should have taken off 14,250 packs noyles, which is added to the clothing wool, from the combing, but considering part of the waste charged upon the combing in the noyles aforesaid, and the combing not wasting so much in the further manufacture, I have taken no notice of it. The total account is—

PACKS.	LABOUR.	HANDS EMPLOYED.	WOOL & LABOUR.
272,175	£5,788,800	964,799	£7,950,200

I divide labour by the number of packs, and it gives the labour of each pack, on an average about £20 16s. 4d. per pack, which makes labour and wool as £7,950,200.

And as to the price I have valued wool at I am sure it is not too much, for whatever it wastes in washing and winding, is not wool, but filth imbibed in the fleece; yet I allow that wool hath bore a better price by two-pence or two-pence half-penny per pound in the fleece, more especially pasture or combing wool, which has increased upon us by inclosures almost as much as the demand is lessened by printed linens, &c., and I don't see how it will advance again, unless the royal family, which is large, and occasion many birth-days, should think proper, at least once a year, to wear worsted stuffs, which may be embellished in such a manner as to appear splendid, and by that means bring them into a fashion; and also if the gentlemen would wear duroys, or other worsted stuffs during the summer, and on such birth-days embellished as aforesaid, it would not only render them fashionable at home, but likewise in all our Colonies abroad, and would put the manufacturers on emulating or vying with each other, as ought in a great measure to restore the use of that wool which is most heavy on our hands and most coveted abroad.

A more difficult task cannot be conceived than that of estimating the quantity of wool grown in the kingdom at this date, and thence deducing the value of the manufactures from it. One of the best commercial writers of modern times\* broadly and boldly asserts, that all the computations as to the number of sheep we possessed, and their produce, are so *utterly contradictory and exaggerated* as to be nearly worthless, until the year 1800, when Mr. Luccock produced his well-considered and laborious calculation. Bearing in remembrance this observation, the above estimate of the author of the 'Short Essay,' rough though it be, furnishes a text for much comment, and may, by other helps, aid in elucidating the truth. It is based principally upon four grounds.

\* McCulloch's Dictionary of Commerce.—Article, 'Woollen Manufacture.' He observes, that, as to the value of the manufacture and number of persons employed, "the most discordant estimates have been given as to both these points. For the "most part, however, they have been grossly exaggerated."



1st, the quantity of wool employed in the various descriptions of the woollen and worsted manufacture; 2nd, the value of the wool; 3rd, the value of the labour required in working up the material; and 4th, the number of hands engaged in the process.

Respecting the first of these bases, it is evident, on a very cursory inquiry, that the quantity of wool set down by this writer is, compared with the opinions of contemporaries, a very moderate one. Webber, London, and the Draper, to answer whom the 'Short Essay' was written, calculate the amount at 800,000 packs,\* which is so preposterous that their opinion may be deemed valueless. The ensuing statements, however, are deserving of more consideration. In a petition from the British woollen (including worsted) manufacturers, presented to Parliament in the year 1737, it is stated, that 430,000 packs of wool were produced in Great Britain, and in Ireland 143,333 packs, making a total of 573,333.† This, it is quite certain, was too high a computation. Salmon, in his *Modern History*, (1731) relates that the growth of England amounted to 12,000,000 fleeces, which if taken at three pounds and a half per fleece, reaches only to 175,000 packs, to which if a fourth be added as the produce of Scotland,‡ the whole for Great Britain will only amount to not much more than 200,000 packs, and this probably may be set down as too little. The conflicting testimonies respecting the produce of Irish wool are even wider than the above. On the occasion of a great debate in the Irish Parliament, during the year 1740, touching the exportation of wool, it was urged, "that from a computation which had been made "with great accuracy, and had been acquiesced in by all "parties, the evil [of such exportation] was much less than "passionate, ignorant, and interested people had represented, "particularly on the other side of the water." This computation was that 1,000,000 stones of wool, (of sixteen pounds to the

\* Smith's *Memoirs of Wool*, vol. 2, p. 333, *et seq.* :

† *Ibid*, vol. 2, p. 287.

‡ The quantity of wool grown in Scotland, was, on many occasions, assumed to be at this period, about one-fourth of that of England.

stone equal to 66,666 packs) were grown in Ireland, of which it was supposed there were

Used in Ireland . . . . .	700,000	stones
Exported to England in Wool and Yarn . . . . .	150,000	„
In Manufactures to Foreign parts	50,000	„
In Raw Wool . . . . .	100,000	„
Total . .	1,000,000*	

Smith, in his *Memoirs of Wool*, is of opinion that a larger amount was produced in Ireland at this period; and it will be observed, from the preceding page, that it had even been set down at 143,333 packs. Having exhibited the best authorities that can be produced on this difficult subject, the reader may compare them. One conclusion will be come to by all who have investigated this subject, that the tendency was almost universal to exaggerate our home supply of wool, and that the estimate of the author of the ‘Short Essay’ is a moderate one.

Second:—The value of the combing wool, in the above ‘Tabular Statement,’ is certainly rated rather under than over the medium price of the day, when it is considered that our author is rating sorted wool which had, at least, one-fourth picked out as inferior. For such assorted wool, it is evident the prices he has affixed, varying from sixpence to tenpence per pound, for that used in the worsted manufacture are not exaggerated ones. He values the picked wool employed in the choice manufactures of Norwich and London at only ten pounds a pack of two hundred and forty pounds, which looking at the price at this time of wool direct from the fleece, is evidently not above the true value, even when it is admitted that wool in 1740-1, was exceedingly low in the market. Thus, it appears, that in computing the value of the manufacture, the author of the ‘Short Essay’ has not overestimated the value of the raw material.

\* Smith’s *Memoirs of Wool*, vol. 2, p. 350.

Third :—Gregory King and Dr. Davenant, forty years previous, calculated the value of the labour employed in the woollen and worsted manufacture at three times that of the raw material. In the middle of this (the 18th) century, many writers estimated the relative value of the labour at three times that of the wool, and on inspection it will be observed, that this proportion in the average governs the calculations in the ‘Tabular Statement,’ though for the finer qualities of worsteds, the estimate is five times the value of the *picked* wool. In considering the value of the labour in the worsted occupation, it must be borne in mind that nearly all the spinning was performed by women and children, especially the latter ; and that there was a universal complaint of the lowness of wages.

Fourth :—Great diversity of opinion, has, at various epochs of our history as a manufacturing nation, prevailed as to the number of people employed in our manufactures from wool. About the year 1726, it was represented to the House of Commons, that the persons engaged in these occupations numbered 700,000 souls. And in the Gentleman’s Magazine for 1739, it is asserted, that then it was highly probable they amounted to more than 1,500,000 persons. Without further investigation, the latter statement may be dismissed as improbable, unless it included those who gained subsistence from the numerous trades and businesses indirectly connected therewith. A writer in the year 1715,\* (before quoted at page 211) calculated that a pack of short wool made into cloth would employ 63 persons a week ; a pack of long wool for stuffs 302 persons at a cost of forty-three pounds ten shillings. But that such a pack wrought into the *finest stuffs* would employ double the number of hands, in spinning and weaving especially. Mun, in his *Golden Fleece*, published in 1736, calculates that a pack of wool made into broad cloth would employ 58 persons, and that the like quantity of long combing wool of Lincolnshire, Leicestershire, Northamptonshire, Kent, &c., made into fine stuffs, says, sagathies, camblets, long

\* Haynes’ Provision for the Poor.



ells, &c., for the Spanish and the Portuguese trades would require 158 hands for a week. He thus sets them out:—

6 Combers at 12s. . . . .	3	12	0
Dyeing, &c. . . . .	1	10	0
120 Spinners at 2s. 3d. . . . .	13	10	0
10 Throwers and Doublers at 8s. . . . .	4	0	0
22 Weavers at 10s. . . . .	11	0	0
	<hr/>		
	33	12	0
	<hr/>		

For stockings, he sets down 149 persons, at a cost of £55, to work up the like amount of wool. Total hands employed on 3 packs of wool, 365; sum of the labour, £108. Our author quoting this passage, observes,—“If he [Mun] means packs of wool clear of waste, then I employ 936 hands, where he employs but 365.” These wide differences of opinion shew the perplexity of the subject. Smith, writing in 1747, doubts “whether any near calculation can be made, either of the whole quantity of wool grown, or of the whole number of persons necessary to the manufacture thereof. There being difficulties in which neither the Smithfield toll books, nor the number of acres, nor the knowledge of what number of hands a pack of wool will employ in this or that kind of work, will afford sufficient light, because different lands produce very different quantities of wool, and different sorts of manufactures employ a very different number of hands.” Having thus stated these objections, and the opinions of others who have made a similar estimate, after due deliberation it appears, that the approximation of our author is entitled to credit, and that the number he sets down, about 1,000,000 persons, was probably the nearest that has been made of those at the time employed in working up our wool. It will be remembered, that, a large portion of Irish wool was sent to England, so that it is probable that of this number 800,000 may be allotted to England. It must be remarked, that, a larger number of persons is allotted as employed in the worsted manufacture than in that of woollen.

As to the value of manufactures from wool, it seems that the amount of about £8,000,000, which it is set down at in the 'Tabular Statement' is, according to other writers, *below* the mark. Waterston, in his Cyclopædia of Commerce, (article 'Woollen Manufacture') states, that, in 1741 the value of the *English* manufacture was £8,340,000. It will be seen, from the 'Tabular Statement,' that the value of the worsted manufacture is estimated at a higher sum than that of woollen. During the last thirty years the former had extended amazingly. The exports of woollens and worsteds at this date, (1741,) amounted to almost £4,000,000 sterling, a very rapid and unprecedented increase of about £1,000,000 in so short an interval. But in this prosperity the woollen trade did not equally participate with that of worsted. For the last half century we find our writers on commerce frequently alluding, either incidentally or at large, to the decrease of the old drapery, and enlargement of the new or lesser drapery. Altogether a remarkable change had occurred in the fashion of woven materials of dress. Spanish broad cloth had formerly been extensively in vogue, but had now fallen into disuse, and been superseded by lighter fabrics. Also some sorts of worsteds, as we have seen, such as russels, sattens, &c., had ceased to be in request, but others had become current in their stead. From a pamphlet on improvements in manufactures, published in the year 1739, and which excited considerable attention in its day, a passage, which touches on this topic is drawn.—

"If" writes he, "we compare the present state of our trade with what it was about twenty years ago, it will be found, that, so far from having reason of complaint we ought to exult. The increase of our trade and industry is as visible as the increase of our wealth in consequence of them is undoubted and certain. 'Tis true that some of our ancient manufactures are lessened and some quite disused; but, 'tis equally true that there is a very considerable increase of some manufactures, and that others are invented within these twenty years. For instance, the manufacture of what the clothier calls Spanish cloth, worth from five

“to eight shillings per yard, is greatly lessened if not quite disused; but, the manufacture from two shillings and six-pence to four shillings per yard, of kerseys, Welch-plains, druggets, sagathies, German serge, stockings, hats, camblets, and stuffs of various kinds, is augmented far beyond what it was when Spanish cloth was called for from abroad.” He then proceeds to prove that the manufactures from wool had increased, because there were no stocks of the raw material on hand, though without doubt one-third more was produced than twenty years before.

The two pamphlets before quoted, namely that of the Northamptonshire Worsted Manufacturer, and that under the title of a ‘Short Essay, &c.,’ were written, along with innumerable others, on the topic of the extensive smuggling of English and Irish wool to France for the purpose of carrying on there the worsted trade. This illicit commerce had, by the Plague which prevailed in that country during the year 1720, received a severe check, but had now recovered, and was in a very prosperous condition. From Savary’s work\* it may be gathered that in France were made serges, baracanes, camblets, calimancoes, tammies, crapes, bays, perpetuanas, anacostes, and indeed almost every description of worsted stuffs. On reference to the pages of that work, it is evident that for making many of these the French employed their own wool alone, but for the fine sorts they were compelled to use English or Irish wool, either solely, or mixed with the longest and finest stapled of their own. During the early part of the century, the practice of smuggling English wool mostly prevailed on the sea-coast of Kent, and it seems the French refugees settled at Canterbury, were implicated in the traffic. Haynes’ ‘Provision for the Poor,’ printed in 1715, contains this passage, “the generality of those employed in working wool at Canterbury are French refugees, or such as act under them, for such is the corruption of that place, that a few years ago being there I caused a list to be taken of all the master combers in the city, and upon

\* Dictionaire Universel du Commerce.



“consulting with one of them who had been a fair trader, “upon an impartial computation, he charged above one-third “of them to have been transporters of wool to France and “other foreign parts.” If this statement, as to the conduct of the French refugees, be correct, they made but a sorry return to their adopted country for the privileges she accorded them of becoming her children, and participating in her freedom.

At this time, (1739-40,) if we are to believe the complaints raised throughout the kingdom, the smuggling of our wool had attained its climax, being shipped from the whole seaboard of England; the most monstrous estimates were formed of the quantity thus sent abroad, but, they are so utterly absurd as to be wholly unworthy of serious consideration. That a large weight of our long wool found vent in France, where it sold for a very high price, is unquestionable, notwithstanding every endeavour by our legislators to prevent the practice. But this was more openly and in greater magnitude the case, as regards the running of Irish wool and yarn. The Irish yarn, though not spun very fine, had some qualities which rendered it in especial request in England. “We do not,” remarks a writer of the period, “buy “the Irish spinning for fineness, for our people spin much “finer; but on account of its nature and quality. It is very “useful to our weavers in mixing with our own spinning, “and making several sorts of goods for foreign markets, “and on that account only we buy it.”\*

The yarn sent from Ireland to England paying a duty, and it being deemed probable that the remission of that impost would prevent, or at least lessen, the illicit exportation of Irish wool, and cause larger quantities of it, and the yarn, to come into the hands of the English weaver, and be thus of benefit to our trade, steps were taken to effect that object. The combers and spinners of England instantly took the alarm, on the ground that such a measure would materially reduce their wages, already at a very low ebb. A broadside,

\* “Observations on the present State of Ireland, particularly with relation to the “Woollen Manufacture. In a Letter to the Duke of Dorset.”—*London*, 1731.

headed ‘Reasons offered by the Manufacturers of combing and spinning in England, against taking off the duty on Irish yarn exported,’ was widely circulated. Among these ‘Reasons’ it was advanced, that owing to the cheapness of provisions in Ireland, the poor could work four-pence in the shilling lower than those of England; that the wages of English spinners were then so low, that they could scarcely get bread, two-pence out of every shilling being abated in their wages: that Irish yarn then sold in England from sixteen-pence to eighteen-pence per pound, whereas one pound of English yarn of the same fineness would cost two-shillings, and that “our wool “when combed cost fourteen-pence, and the spinning ten-pence, of that which was spun to a shilling.” A very considerable quantity of the Irish worsted yarn sent hither found a market in Norwich, where it formed the material for calimancoes. Hence the weavers of that city looked with favour on the attempt to obtain a free import of that description of yarn. The cry of the poor spinners was not heeded. Parliament passed a law abrogating the duties.\* One of the recitals therein very forcibly declares, that notwithstanding all the means adopted for preventing the runnage of wool from Ireland, it was “still notoriously continued: also, that the “taking off the duties upon yarn imported from Ireland “might be of use to prevent such practice, and tend to “the benefit of the manufactures of Great Britain.” This measure, however, failed in its intended effect—the increased importation of Irish wool into England, though that of yarn improved.

The following table will exhibit the quantity of Irish wool and yarn exported to England at intervals since the commencement of the century.† After the measures taken to destroy the Irish woollen manufacture in the latter part of the reign of William III.,‡ the shipment of these commodities to

\* Statute 12, Geo. II, chap. 21.

† Smith’s *Memoirs of Wool*, vol. 2, page 245, also Rees’ *Cyclopædia*,—Article, ‘Woollen Manufacture.’

‡ 11,360 pieces of ‘New Drapery’ were made in Ireland in the year 1687, but during this reign the manufacture very much decreased.

England was greatly augmented. For the first four years of the century we find exported—

YEAR.	WOOL, STONES AT 18lbs.	YARN, STONES AT 18lbs.	TOTAL, WOOL AND YARN.
1700	336,292	26,617	362,909
1701	302,812	23,390	326,202
1702	315,473	43,648	359,121
1703	360,862	36,873	397,735

The yearly average amount of wool and yarn thus sent may be stated at 30,000 packs, but after this the wool exports to England declined, which no doubt arose from increased clandestine exportation. This is shewn by the following table, taken for four years after the peace of Utrecht.—

YEAR.	WOOL, STONES AT 18lbs.	YARN, STONES AT 18lbs.	TOTAL, WOOL AND YARN.
1711	310,136	55,273	365,409
1712	263,946	60,108	324,054
1713	171,871	68,548	240,419
1714	147,153	58,147	205,300

The decline, as to wool, after this was still more considerable, as shewn by the following. The exportation of yarn increased, owing to the circumstance of spinning being much cheaper in Ireland than England.—

YEAR.	WOOL, STONES AT 18lbs.	YARN, STONES AT 18lbs.	TOTAL, WOOL AND YARN.
1726	51,371	87,261	138,632
1727	58,182	72,047	130,229
1728	49,784	80,428	130,212
1729	38,667	91,854	130,521

After the passing of the above-mentioned act, the exportation of yarn to England increased, but that of wool did not. Smith, in his *Memoirs of Wool*, states, that in 1741, 144,700 stones (of 18lbs.) of Irish *wool and yarn* were sent hither; in 1742, 135,397 stones; in 1743, 131,410 stones; and in 1744, 103,839 stones, shewing a gradual decrease.

As to the price of Irish wool, it is stated to have been not more than fourpence-half-penny per pound from 1703 to 1729, but that *fine* wool in Ireland during the year 1743 sold at a shilling per pound, and the medium sort at ninepence per pound.



From the subjoined table it will be seen, that the consumption of English worsteds in Ireland, was, from the commencement of the century, of small amount, and that the Irish must therefore have produced those, or similar articles, at home for their own wear.

Importation of woollen goods into Ireland from England.—

YEAR.	OLD DRAPERY OR WOOLLEN GOODS.				NEW DRAPERY OR WORSTED.			
	YARDS.	VALUE.			YARDS.	VALUE.		
		£	s.	d.		£	s.	d.
1700	12,119 $\frac{1}{2}$	9,014	12	6	24,522	2,043	10	0
1706	5,514 $\frac{1}{2}$	4,135	17	6	15,308 $\frac{1}{2}$	1,913	11	3
1720	24,412 $\frac{1}{2}$	18,309	3	0	35,605	3,590	10	0
1737	9,626 $\frac{1}{2}$	6,497	17	9	17,569	2,635	8	0
1740	16,714				39,064			
1743	14,582				65,880			

These were only some particular sorts of worsted stuffs, probably Norwich and other fine goods, which found a market in Ireland. There indeed worsteds of some descriptions were not only made for home wear, but shipped abroad in considerable amounts, to the injury of the English trade; such as camblets to Portugal, and they seem to have been of excellent quality. The following extract will clearly prove this:—"The camblets of Ireland are goods the Portuguese have been long accustomed to wear, and that they will have, and do procure these goods from Ireland, appears from the ships we have very lately taken, bound with such goods to Portugal; and the Irish will continue that trade notwithstanding our grand ships, and the encouragement the commanders of our men of war have to search, unless we make it their own interest to discourage it. All that our manufacturers have been able to do, has not been sufficient to prevail with Portugal to approve of the camblets we make."\*

If a survey be taken of the condition of the manufactures from wool for the last half century, it will, most assuredly, be found that, however unprosperous at particular periods,

\* Letter to the Duke of Dorset, on the State of Ireland, before quoted.

on the whole, they were a growing and improving source of national income. This is incontestably deduced from the table of exports of these productions, printed in the appendix, whence we are enabled, as it were by a gauge, to ascertain the rise and fall of our foreign commerce in that description of merchandise from the year 1697. In the year 1700, these exports did not quite reach three millions, but in the year 1708, even when the nation was at war, they exceeded that sum. After many fluctuations they attained in 1736 the remarkably large amount of four millions sterling and upwards, and continued about that point for the succeeding two years. Then followed a sudden and alarming fall. From, however, the year 1743 to the termination of the half century, the worsted trade in particular formed a thriving pursuit, and the exports therein had rapidly increased. Since the earliest periods, as often before observed, the consumption of worsteds at home, for women's and children's dresses, and for furnishing, had always been extensive, and constituted the chief support of the manufacture, more especially at Norwich. After the custom of wearing chintzes had become common, this home market having in some degree failed, the export trade in worsted was enlarged to make up the loss. There is something exceedingly instructive to be learnt from a comparison of the exports of products from wool in three years of war, 1739-40-41, with those of three years of peace, in 1749-50-51. In the former series, the medium yearly exports were of the value of £3,314,915; in the latter, they amounted to the large sum of £4,334,873: a yearly difference of one million! Can any fact be more conclusive of manufactures flourishing in times of peace. Nor did this prosperity affect one branch of our exports alone, as the case is similar with respect to the aggregate of all our exports in those two periods.

At once it will be remarked, that there had been a surprising rise in the septennial period closing this half of the century, and we have from other sources the fact, that in this spring the worsted manufacture participated to a large degree. From many passages scattered in the preceding pages, constituting the portion of this work from the year

1700, it will be gathered, that whilst there occurred a manifest fall in the demand for cloth, especially of the heavier descriptions, the 'new drapery' had evidently increased. Therefore whatever growth is perceptible in the returns above alluded to, it must, in the main, be set to the account of our worsteds.

Looking at the price of wool also during the last seven years, it appears to have been as high as in any part of the half century, if a few intervening years be excepted. True it is that, from the year 1743 to 1751, the rate of wool may have been sensibly augmented by the increase of the contraband transport in that interval. But on comparison, however, of the following table with the exports, it will be seen that the standard of wool as to price seems, in a great degree, to tally, to rise and fall, with the state of our export of its manufactures. Nor could this improvement in the value of wool be in the least attributed to a diminished supply, for it is universally admitted by contemporary authorities, that, from many causes, the chief of which being the demand and high price, the yearly quantity of wool grown in England in this septennial period, must at the lowest computation have exceeded that of the preceding one by a third. No intricate reasoning is required to prove, that at the end of the year 1749, the prospects of the worsted manufacturers in all parts of the kingdom were cheering; their artisans fully employed, and a more extensive export trade opened for the products of their hands than at any former point of our annals.

A very great change was gradually taking place in the quality of wool grown in England. Long woolled sheep were much more generally diffused throughout the kingdom than formerly. Very many counties now abounded in them, namely, Lincolnshire, Leicestershire, Cambridgeshire, Nottinghamshire, Warwickshire, Devonshire, Durham, Yorkshire, and other counties. Except in the marsh lands, long wool had ceased to be the peculiar growth of Norfolk, which now, by a strange metamorphosis, supplied excellent material for cloth.

The following table gives the price of long wool in Lincolnshire, since the commencement of the century, and may



be taken as the average price throughout the kingdom. Price of Lincolnshire wool per tod of twenty-eight pounds.—

	£	s.	d.		£	s.	d.
1700 .. ..	0	18	0	1727 .. ..	0	16	0
1701 .. ..	0	18	0	1728 .. ..	0	18	0
1702 .. ..	1	1	0	1729 .. ..	0	18	0
1703 .. ..	1	1	0	1730 .. ..	0	18	0
1704 .. ..	1	0	0	1731 .. ..	0	19	0
1705 .. ..	1	0	0	1732 .. ..	0	19	0
1706 .. ..	0	17	6	1733 .. ..	0	18	6
1707 .. ..	0	16	6	1734 .. ..	0	16	0
1711 .. ..	0	13	0	1735 .. ..	0	14	0
1712 .. ..	0	14	0	1736 .. ..	0	14	0
1713 .. ..	0	17	0	1737 .. ..	0	14	0
1714 .. ..	0	18	0	1738 .. ..	0	13	6
1715 .. ..	0	18	0	1739 .. ..	0	13	0
1716 .. ..	0	19	0	1740 .. ..	0	14	0
1717 .. ..	1	3	0	1741 .. ..	0	14	0
1718 .. ..	1	2	3	1742 .. ..	0	15	0
1719 .. ..	1	2	0	1743 .. ..	0	19	6
1720 .. ..	1	0	0	1744 .. ..	1	1	0
1721 .. ..	1	0	0	1745 .. ..	0	16	0
1722 .. ..	1	0	0	1746 .. ..	0	16	0
1723 .. ..	0	17	6	1747 .. ..	0	16	0
1724 .. ..	0	16	0	1748 .. ..	0	18	6
1725 .. ..	0	16	0	1749 .. ..	0	19	6
1726 .. ..	0	15	9				

Adverting to the mode in which the worsted business, in the former part of the eighteenth century, was, in its various departments, transacted, the following particulars, culled from several sources, will prove of interest.—

Then as now, the woolstaplers and dealers formed a large, respectable, and wealthy body, and were to be found located in most parts of the kingdom, dealing in the wool of the district. The chief places, however, in which they congregated in any considerable numbers, were London, or rather Southwark, in Barnaby street, and Blandford in Dorsetshire.

A considerable number also carried on business at Norwich, and in various parts of Lincolnshire and Leicestershire. Stourbridge fair stood the highest in the kingdom as a wool mart, and was resorted to by the dealers and manufacturers from all quarters; from Norwich, Exeter, Coventry, and even from such a distance as Yorkshire. The next class of persons engaged in the business were the master-woolcombers. Theirs was a trade of itself. These tradesmen purchased the wool of the staplers, and put it out to comb. The wages of journeymen woolcombers were excessively high, and as the preceding pages inform us, they constituted a formidable class of workmen, often dictating laws and conditions to their employers, and by their powerful combinations and unions were enabled, in a great measure, to control the rate of wages. The author of 'The London Tradesman,' published in the year 1747, says, that they could obtain from twelve to twenty-one shillings a week for wages. Those of the country workmen would be much lower, but enough is known to establish the fact, that their remuneration was excessively high.

According to the old practice of wool-combing, and which now prevailed, three implements were used.—

- 1 A pair of combs for each person.
- 2 A post to which one of the combs could be fixed.
- 3 A comb-pot, or small stove, for heating the teeth of the combs.

Each comb was composed of either two or three rows of pointed, tapering, steel teeth, disposed in two or three parallel planes, each row being a little longer than the preceding. They were made fast at the roots to a wooden stock or head, covered with horn, with a handle fixed to it at right angles to the lines of the teeth. The first combing, when the fibres were most entangled, was performed with the two-row toothed comb: the second or finishing combing, with the three-row toothed. In combing the wool the workman took it up in tresses of about four ounces each, sprinkled the wool with oil, and rolled it about in his hands to render all the filaments equally unctuous. He next attached a heated comb to the

post, with its teeth pointing upwards, seized one-half of the tress of wool in his hands, and throwing it over the teeth, drew it through them repeatedly, leaving a few straight filaments each time upon the comb. When the comb had in this way collected all the wool, he placed it with its point inserted into the cell of the stove, with the wool hanging down outside exposed to the influence of the heat. The other comb, just removed in a heated state from the stove, was planted upon the post, and furnished in its turn with the remaining two-ounce tress of wool, after which it supplanted the preceding one at the stove. Having both combs heated, the comber held one of them with his left hand over his knee, being seated on a low stool, and seizing the other with his right hand, he combs the wool upon the first, by introducing the teeth of one comb into the wool stuck in the other, drawing through it, and skilfully repeating the process till the fibres were laid parallel like a flat tress of hair. The combing was begun at the tops of the tresses, and advanced progressively from the one end towards the other, till at length the combs were worked with their teeth as closely together as possible, without bringing them into collision. If the workman proceeded otherwise, he would be apt to rupture the filaments, or tear their ends entirely out of one of the combs. The workman then with his hands drew the longer pile from the combs. The flocks left at the end of the press, because they were too short for the comber to grasp them in his hands, called *noyls*, being unfit for the worsted spinner, were sold to baize and coarse cloth manufacturers. The wool finally drawn from the comb, though forming a uniform tress of single filaments, required to be combed again at a somewhat lower temperature to prepare it perfectly for spinning.—*Luccock on Wool.*

Since the commencement of this century, the woolcombers had become a powerful, organized body, who frequently by their commotions, strikes, and insubordinate conduct, occasioned much difficulty to the masters. In order to keep up wages, these workmen established a rule, that none of them should take an apprentice, except his eldest son, to the great



detriment of trade, for by restricting the number of hands, wages were advanced, and consequently the price of goods. This example of the combers soon found imitation in the worsted weavers, who sought to regulate, not only the rate of their own wages, but even the prices at which the products of their labours should be sold. So audacious and arbitrary had the proceedings of these two classes of operatives grown, that it became necessary to solicit the intervention of the Legislature, through the potent influence of the merchants and manufacturers of Norwich with the Ministry; and a statute passed, which after stating, that numbers of combers and weavers had formed themselves into combinations, and pretended to regulate the trade, and the prices of their productions, and advance wages, and to carry out their object had resorted to violence; "it was declared, that all contracts, "agreements, or proceedings, in these combinations, by any "woolcomber or weaver, for regulating the said trade or wages, "or lessening the hours of labour, were illegal and void, and "that the persons entering into them, should, upon conviction, "be liable to imprisonment not exceeding three months."\* There was also a clause, that any woolcomber or weaver quitting his service or not fulfilling his contract with the master, or spoiling work, should be sentenced to imprisonment. Although numerous informers sprang up to assist in putting down these unions of the operatives, as witnessed in the columns of the periodicals of the day, still they continued, notwithstanding all the endeavours of the Legislature and the masters, to exist; and as will hereafter be noticed, the workmen seem on many occasions to have been the dictators to their employers, and to have had really in their hands the power of enforcing their demands.

The combers and spinners of wool, were, also in these days, exceedingly guilty in embezzling their masters' materials, and committing frauds in their work. To check these, Parliament

\* Statute, 12, Geo. I., chap. 34, "An Act to Prevent Unlawful Combinations "of Workmen employed in Woollen Manufactures, and for better Payment of "their Wages."

passed a law,\* whereby those workpeople who offended in purloining or embezzling wool or yarn entrusted to them, or reeled false or short yarn, were liable, upon conviction, to be committed to the House of Correction, to be there whipped and kept to hard labour for any time not exceeding fourteen days. These stringent measures forcibly exhibit the frequency and inveteracy of the offences they were intended to repress.

After combing, it required much carriage and labour to transport the wool to various parts of the kingdom to be spun. Thus, the weavers of Norwich and the parts adjacent, and the weavers of Spitalfields, besides what was spun in the very populous counties of Norfolk and Suffolk, where the women and children were mostly spinners, employed almost the whole counties of Cambridge, Bedford, and Hertford; these not being sufficient, very great quantities of wool were

\* Two Acts of Parliament, were, during the reign of George II., passed, to prevent frauds in the manufacture of wool. The first made in the thirteenth of that reign, was an Act to explain and amend one made in the first year of Queen Anne, for the prevention of abuses and frauds of persons employed in the working up of the woollen and other manufactures of the kingdom; and this first Statute of George II., provided, that if any person or persons hired or employed in working up of any woollen or other manufacture, should purloin, embezzle, secrete, sell, pawn, exchange, or otherwise illegally dispose of any materials with which he, she, or they should be respectively entrusted to work up, or should reel false or short yarn, they should, on conviction, forfeit double the value of the damages sustained by the owner, with full costs of prosecution, and in case of non-payment to be committed to the House of Correction, to be there whipped and kept to hard labour for any time not exceeding fourteen days; and upon second offence to pay four times the value of the damages, besides costs, or be committed to prison and hard labour, for not more than four months, nor less than one, and to be whipped at the market cross of the town where committed, once, or oftener, as the justice might seem reasonable: buyers and receivers of embezzled materials were subject to the like penalties and punishments. The second Act (that of 22, George II., chap. 27,) recites, that the penalties above stated had not been sufficient to deter persons from committing the offences above set forth, and therefore it was amended, and embezzlers or reelers of false or short yarn, charged upon the oath of the owner, or other credible witness, were to be committed to prison for the periods above stated, and whipped, *without the option of paying any penalty*; but receivers of embezzled material, were, upon conviction, to forfeit for the first offence £20, and in case of nonpayment be committed to prison to hard labour for fourteen days, and be publicly whipped. For a second offence £40 penalty, or imprisonment with hard labour, for not more than four months, nor less than one, and to be publicly whipped twice or oftener.

sent by land carriage to Yorkshire, and other northern counties, even so far as Westmoreland, to be spun, and the yarn returned in the same way to London and Norwich.

The worsted manufacturers of Bradford, Halifax, and the surrounding districts, also forwarded large quantities of wool to Craven and the North-Riding of Yorkshire to be spun; it appears likewise that worsted yarn was also supplied by Lancashire.\*

Worsted spinning was performed both by the ancient distaff and the spinning wheel. Dyer, in his Poem 'The Fleece,' published in 1757, thus alludes to these two modes of spinning:—

“ There are to speed their labours who prefer  
Wheels double spol'd, which yield to either hand  
A several line; and many yet adhere  
To the ancient distaff at the bosom fix'd,  
Casting the whirling spindle as they walk.”

It is evident that at this period there was a two-spooled wheel, as well as the common one-spooled wheel in use. With these instruments, rude as they were, compared with the aids of modern art, yarn of exceeding fineness could be spun.†

But the vast demand for yarn could not be supplied by English hands, of such immense extent was the manufacture, so that a large quantity of yarn had to be brought over from Ireland, landed at Bristol, then conveyed to London, and afterwards a large portion of it to Norwich.

The county of Essex was chiefly employed in the manufacture of bays and perpets, the wool for it being in a

\* It appears that there was a trade between Lancashire and Yorkshire for worsted yarn. In a letter from a Mr. Rauthmell to Dr. Richardson, dated Browsholme, in the West-Riding, 11th Oct. 1731, published in Dr. Richardson's Correspondence, edited by Dawson Turner, (1835,) Rauthmell says, “ I am glad you can procure “ Morton's History of Northamptonshire for me, be pleased to get it as cheap as “ you can, and I will order Hodgson, the Jarsey man, to call for it and pay you.” Jarsey was the Lancashire name for worsted, and this extract shows that Hodgson, the *Jarsey man*, travelled from Browsholme, which is on the confines of Lancashire to Bradford, near which is Bierley Hall, the residence of Dr. Richardson.

† In March, 1754, the most extraordinary performance in spinning ever known, was produced here by Mr. John Aggs, of Mattishall, being twelve dozen and six skeins of curious, hard, even spun crape yarn, made by a woman of East Dereham, which weighed only sixteen ounces and nearly two drams.—History of Norwich, pt. 1, p. 337.



great degree, bought from the London staplers, and spun by the Essex people.

Two methods were adopted by the worsted manufacturers in obtaining the yarn required by them. Those of London purchased from what were termed worsted-men, who were shopkeepers, and either bought their stock from the spinners, or employed women and children to spin for them. The other method was followed in the country. The master-weavers either put out the wool themselves to a sort of middle-men, in districts and villages, who again had under them a number of spinners, or else made their purchases from the master-woolcomber, who, often likewise, was an extensive 'putter-out' of wool to spin.

When there occurred a depression in trade, the consequences of these two systems were thus felt. The London manufacturer, buying his yarn of the worsted dealer, so soon as the demand for his goods ceased, or became unprofitable, at once stopped his looms, and the whole of his workmen were immediately thrown out of employment. But this was not the case with the country-master, who did not, when the markets failed, immediately put a stop to his works, but kept his markets and made his circuits to put out wool and take in yarn; because, if he discontinued to do so, his spinners would seek work from other sources, and could not perhaps be again obtained when wanted. Besides, the scarcity of yarn, in ordinary seasons, caused the masters to be much dependent upon the good-will of the spinners. Thus the country master-weavers were, in a large measure, compelled to continue their business operations, even when the want of demand for their goods filled their warehouses, and Blackwell Hall was piled up with stuffs transmitted from the country for sale, but found not purchasers.

At this time, the scarcity of yarn for the worsted weavers interfered very seriously with their power of production; and when the sale of their goods was brisk, the looms oftentimes could not be worked for want of a supply of yarn. Industrial schools for spinning, were established throughout the kingdom, at which children of very tender age were taught to spin.

In De Foe's *English Tradesman*, (fourth edition, London, 1738,) a table is given of the localities of the wool manufactures, from which the following is abstracted:—

Druggets, duroys, serges, and stuffs, of many denominations, made chiefly in *Wilts, Somerset, and Berks*, the stuffs in *Norwich and Norfolk, Spitalfields, Bristol, and Darlington*.

Tammies, or *Coventry Ware*, at *Coventry*.

Shalloons made in *Northamptonshire, West-Riding of Yorkshire, Berkshire, Somersetshire, Wiltshire, and Hampshire*.

Says at *Sudbury*, formerly at *Colchester*.

Perpets, or long ells, at *Tiverton*, and other places in *Devonshire*, and also at *Sudbury*, in *Suffolk*, and *Colchester*.

Stuffs for hangings and printing, at *Kidderminster*; bays, double, single, and minikin, at *Colchester, Bocking, Braintree, Whitham, Coggleshall*, and several other towns of *Essex*, and also at *Manchester*.

It is from this list evident, that the making of worsted stuffs had been commenced at *Darlington*, affording another indication that the manufacture was fast spreading in the North of England. The extent of the shalloon trade is apparent, being carried on in all quarters of the kingdom. In the above enumeration the serge manufacture of *Exeter* is not noticed. *Kidderminster* was the seat of the moreen and damask manufacture and all sorts of bed furniture and hangings. Although carpet making is not mentioned by De Foe, it is known, from other sources, that the coarser descriptions were made in *London* and other places, but the best carpets came from the looms of *Wilton*. A correspondent of the *Gentleman's Magazine*, for March, 1743, in remarking on the worsted trade, mentions the makers of serges, sagathies, and duroys, in the West; and instances especially *Tiverton, Taunton, and Exeter*, for the manufacture of these goods.

The export of worsteds were in the main to these countries: *Holland* was now as in the year 1700, our chief customer, and took from us stuffs of all descriptions to a great value, and the balance of trade in cash was greatly in our favour, notwithstanding that we imported thence much linen. Our trade in this respect was not very considerable to *Flanders*;

thither we sent serges and a few stuffs, and in return purchased fine lace, lawn, &c. To Germany were forwarded serges, stuffs, broad cloths, and long ells, but so extensive were our returns from that country in linen and flax, that the balance was much against us. Spain still continued an important consumer of our calimancoes and stuffs of various sorts, bays and broad cloth, but the French had now more than ever gained ground of us there. Portugal and her Colonies also took the same description of goods as Spain, and the imports thence of wine, oil, &c., being small, the balance in money was a large one on our side, and the commerce with the Portuguese a very lucrative one. Though the French trade in worsteds increased in Italy, yet we transported thither, calimancoes, camblets, and other stuffs to a large amount, and brought in return mostly silk. The trade to Turkey both in broad cloth and stuffs had declined, but we imported from the Levant great quantities of program yarn, of which we made hair camblets, plushes, mohair for beds, prunellas, &c. But a larger opening was obtained in some of our thriving Plantations for all our productions from wool. The Sugar Plantations were too profitably engaged to manufacture for themselves, even if they had had the material and the hands, hence our exports in clothing were extensive, and we shipped in return sugar and spices. The like demand from the mother country was experienced in the Tobacco Plantations. There were during this half of the century vast numbers of long ells and calimancoes exported to China, where in winter the climate is cold.\*

The whole value of the exports of manufactures from wool amounted in the year 1749, to £4,477,851, while the aggregate of all our exports in that year only reached to the sum of about £12,000,000.

\* Anderson, in his History of Commerce, vol. 3, page 162, states, that there were exported from the port of London, in the month of May, 1730,—

Woollen cloth, long, short, and Spanish	..	5,357	pieces.
Bays, Colchester, &c.	.. ..	6,990	„
Stuffs, Druggets, &c.	.. ..	24,484	„
Perpets and Serges	.. ..	4,108	„

In the year 1731, there were exported from the port of London,—

Perpets	.. ..	1,995	dozen.
Plains	.. ..	9,640	goads.
Stuffs and Bays	.. ..	38,915	pieces.



Thus it has been seen how extensive the commerce in English stuffs, in all their ramifications, had become ; how the manufacture employed and subsisted hundreds of thousands of our artisans and their families ; and how it undoubtedly, constituted an immense manufacture of the realm. It had spread itself into every quarter of the kingdom ; on the north, in Durham and Yorkshire ; on the south, in Devonshire and Hampshire ; on the west, in Wiltshire, Somersetshire, Warwickshire, and other counties ; and in the south-east of the kingdom, in Norfolk, Suffolk, and Essex. It was still in every respect a domestic manufacture pursued by the fireside, where the hum of the spinning wheel, and the click-clack of the loom mingled together—and had enabled England, even then, to furnish with apparel the nations of the earth “from China to Peru.”

## CHAPTER VIII.

Great development of the Worsted Manufacture in the latter half of the Eighteenth Century.—Increase of Norwich Trade, and Anecdotes of its Tradesmen and Operatives.—Turn-out of Combers in that City.—Calimancoes and Figured Stuffs produced in the West-Riding.—Tammies at Wakefield.—Frauds of the Wool Growers.—Petitions to Parliament thereon.—Notices of the Towns in England where the Worsted Manufacture was chiefly carried on, and Description of Stuffs produced by them.—Importation of Irish Wool and Worsted Yarn to Norwich.—Permitted to be disembarked at Yarmouth and Lancaster.—Improvement in the Commerce in Stuffs to the East Indies.—Arthur Young's Description of the Norwich Trade in 1771, and also of other Localities of the Manufacture.—List of Wages.—Great Commotion among the Worsted Manufacturers respecting the Attempt to impose additional Duties upon Foreign Linen.—Petition to Parliament thereon from the Stuff Makers of the West-Riding.—Detailed Account of the Yorkshire Worsted Trade.—Its great extent.—The value thereof, Description of Goods made, and relative value of each.—Quantity exported.—Number of Combers employed in the West-Riding.—Important Acts of Parliament obtained to prevent the Embezzlement of Wool and false reeling of Yarn.—The 'Worsted Committee' constituted thereunder to protect the Manufacturers.—List of the First Committee.—Their Proceedings.—Apportionment of Inspectors' Districts.—Energetic Measures adopted by the Yorkshire Stuff Makers to prevent the Exportation of English Wool.—Our Trade in Textile Fabrics to Russia.—Interesting Description of the Trade of Norwich, in 1798, by an Inhabitant of the City.—Also of the Worsted Manufacture in Yorkshire by an 'Octogenarian.'—Its Condition at the close of the Century.

A PERIOD has now been approached, the latter half of the eighteenth century, in which our manufactures from wool experienced a remarkable development, especially in Yorkshire. In this interval, the worsted branch of industry seems peculiarly to have flourished, furnishing subsistence to thousands of the poor. But its principal extension took place in the West-Riding of Yorkshire, where in the year 1774, the

value of the manufacture amounted to the immense sum of £1,400,000 ; here also, before the termination of the century, the inventions of spinning machines were first applied to the production of worsted yarn, and were destined ere long to produce such a remarkable transformation and growth in all the departments of the trade.

But to return. During the middle of the eighteenth century the manufacturers of Norwich attained the greatest prosperity. The Norwich merchants and tradesmen being energetic and fertile in resources, when one market, or branch of business failed, turned to another. Finding that the monopoly which they had to a great extent enjoyed in the home demand, had, through the competition in cotton goods, vanished, they directed their attention more to foreign marts, and soon by increased exports obtained compensation for the loss they had sustained from this cause. So true it is that monopolies create supineness and sluggishness in commerce, whilst competition stimulates to exertion and prosperity. Between the years 1743 to that of 1763, Norwich reached the palmy, the highest state of its greatness, as “the chief seat of the chief manufacture of the realm.” Undoubtedly in those times it occupied, as ‘the chief seat of manufacture,’ the position of the present Manchester.

Two places in England then stood distinguished for the excellence of their dyers, London and Norwich, and there most of the fine worsted goods underwent the processes of dyeing and finishing. The workmen of the latter city were pre-eminently known for the beauty and permanence of their dyes. Worsted textures were forwarded thither from all parts of England, to be dyed and finished, thus furnishing employment to a large number of workmen, and increasing the trade of the city. A document has been preserved being an account of the stock-in-trade and debts of an eminent scarlet dyer there, and containing a list of merchants and manufacturing houses of that period. It will be seen, that in comparison with the present magnitude of credit, the debts are small, which may be accepted as a proof that the customers abstained from running long bills.



“AN ACCOUNT OF THE VALUE OF UTENSELS AND WEARS,  
AND OF OUR SUNDRY CUSTOMERS' ACCOUNTS WITH  
OTHERS, &c.

17th August, 1752.

	£	s.	d.		£	s.	d.
Utensels .. ..	260	0	0	Mr. Langton ..	3	10	0
Wears and Coals ..	584	13	0	Mr. Moy .. ..	130	2	0
Messrs. Reynolds & Co., Drs.	618	12	0	Mr. Meadows ..	43	12	0
Mr. Charles Weston, Dr.	185	19	0	Mr. Middleton & Co. ..	4	16	0
Mrs. S. Finch, Dr. ..	13	2	0	Mr. Myhill .. ..	36	17	0
Mr. Thomas Angier ..	68	4	0	Mr. Manser .. ..	57	11	0
Mr. Anthony Atthill ..	0	3	0	Mr. Charles Marsh ..	27	12	0
Mr. S. Angier .. ..	23	10	0	Mr. John Maltby ..	12	6	0
Mr. John Arnall ..	9	8	0	Mr. Money & Co. ..	27	4	0
Mr. William Barnard ..	73	17	0	Mr. Oxley & Co. ..	60	11	0
Messrs. Baret & Co.	173	12	0	Mr. Newbs .. ..	0	3	0
Mr. Browne & Co. ..	2	6	0	Mr. Prior .. ..	35	14	0
Mr. Browne & Smith ..	4	15	0	Mr. Pratt .. ..	6	13	0
The Executors of the late				Mr. Page .. ..	57	8	0
Justice Custance	112	14	0	Mr. Paul .. ..	16	1	0
Mr. Claborne .. ..	3	0	0	Mr. Richardson ..	34	0	0
P. Columbine, Esq., & Son	130	0	0	Mr. Rand .. ..	138	0	0
Mr. Thomas Churchman	22	16	0	Mr. Roberts .. ..	1	17	0
William Crowe, Esq., & Co.	149	18	0	Mr. R. and S. Reymes	20	3	0
Mr. John Corsbie ..	128	2	0	Mr. John Reymes ..	30	17	0
Mr. John Cooper ..	130	19	0	Mr. Abraham Roberson	10	6	0
Mr. Richard Claxton ..	4	12	0	Mr. Robert Rayner ..	24	4	0
Mr. William Claxton	23	4	0	Mr. John Scott ..	171	17	0
Mr. Copland ..	19	9	0	Mr. Suffield & Co. ..	13	4	0
Mr. Chamberlin & Co. ..	11	1	0	Mr. Robert Smith & Co.	13	10	0
Mr. John Dyball ..	121	12	0	Mr. Saul .. ..	2	18	0
Mr. Dunn .. ..	3	16	0	Mr. Phil. Stannard ..	155	4	0
Mr. Davey & Co. ..	34	12	0	Mr. Richard Taylor ..	81	7	0
Mr. William Gimingham	46	7	0	Mr. Towler .. ..	0	5	0
Mr. D. Gallant ..	16	12	0	Mr. Thomas Wigg & Co.	323	12	0
Mr. Samuel Grout ..	8	18	0	W. Wiggett, Esq., & Co.	80	3	0
Mr. Halsted .. ..	184	12	0	Mr. Willins & Co. ..	39	17	0
Robert Harvey, Esq.	133	16	0	Mr. Woodrow .. ..	95	17	0
Mr. John Hensman ..	6	9	0	Mr. Woolbright ..	19	10	0
Mr. John Howard ..	6	18	0	Mrs. Willson .. ..	3	18	0
Mr. Holloway .. ..	0	8	0	Mr. Thomas Woodcock	8	0	0
Mr. Gedge .. ..	1	5	0	Mr. Samuel Wiggett ..	57	0	0
Mr. Honoree .. ..	0	11	0	Mr. Jere Ives, junier.	1	4	0
Thomas Harvey, Esq.	71	1	0	Divers persons for many small			
Mr. Larwood & Co. ..	57	9	0	parcels, &c. ..	16	3	0
Mrs. Lincoln ..	1	15	0	Cash in hand .. ..	10	6	6
Mr. John Leach.. ..	80	5	0				
Mr. John Lyng ..	6	5	0				
Mr. Lillington & Co. ..	13	8	0				

\* The East Anglian Newspaper, published at Norwich, January 31st, 1832.

This document first appeared in the East Anglian newspaper, and upon it a gentleman, subscribing himself 'Senex,' who came to Norwich in 1784, and obtained the following particulars from a relative, long an inhabitant, with whom he resided, makes these observations:—"The principal names in this list denote the acknowledged aristocracy of the city. Being opulent men and generally surrounded by their dependents, they had something of a lordly bearing, and a marked line of distinction was preserved between the merchants and shopkeepers; but they were on the whole an honourable race, and exercised much kindness towards those beneath them." The merchants and manufacturers of the nineteenth century will be astonished on learning what were some of the accomplishments of their predecessors. "To improve their carriage," he continues, "they were sometimes accustomed to learn the use of the small sword. This was, I suppose, a general practice, for an eminent dyer being once waited upon by a London traveller, before he would enter upon business, took him to his back parlour for a fencing bout. From this probably they derived their peculiar air on entering a drawing room. What with shouting, scraping, stamping, and bowing, a well-bred gentleman made as much bustle at the door as if an ambassador had just returned from a foreign court. They were merchants as well as manufacturers, and traded to the Baltic, to Germany, Holland, Spain, and Portugal, and through them to the great markets of Brazil and South America, then at the acme of their glory: to Italy, and to China by the India Company. The capital employed was large."\*

In the preceding pages, it has more than once been remarked, that the Norwich artisans, were, in many respects, superior to the ordinary class of weavers, and 'Senex,' from the mouth of his relative, thus describes their condition. "It was reported that every weaver of any character made a point of having a goose, or some equivalent, for his Sunday dinner. At the same time a joint of veal was threepence

\* The East Anglian Newspaper, February 7th, 1832.

“or threepence-half-penny per pound, and the shops were  
 “loaded with butter at eight-pence per pint which was  
 “thought dear, and they began to sigh for the ‘*good old*  
 “*times.*” \* \* \* “One remarkable feature of the  
 “city noticed by all observers, was the stillness of the streets  
 “by day and night. The weavers and their families kept at  
 “home, and when drawn forth by a fine Sunday or holiday,  
 “the chairing of a member, or some *Mousehold* hoax, people  
 “wondered where they all came from. None of those  
 “*attroupements* of what is elegantly called the ‘rising ge-  
 “neration,’ which now so much enliven our public ways; none  
 “of those evening promenades of the fair sex which at this  
 “time so greatly promote the pleasure and comfort of gen-  
 “tlemen’s, and other walks.”\* *Mousehold Heath* was a large  
 common contiguous to Norwich and then formed the ‘People’s  
 park.’

Another extract may here be indulged in from the pleasant  
 sentences of ‘*Senex*,’ or the ‘old man.’ “The prices of  
 “weaving, dyeing, dressing, &c., were settled in the first  
 “cases by joint consultation among the masters, in which  
 “due regard was had to the interests of the workmen, and  
 “printed lists of prices were hung up in each warehouse  
 “for the information of all parties. In the latter cases, the  
 “prices were fixed by consent of both parties, and when an  
 “alteration was necessary the same process was repeated.  
 “No man thought of offering or receiving less than the rate  
 “agreed upon.”

Between the combers, however, and their employers, differ-  
 ences were continually arising respecting wages, and in  
 August, 1752, a formidable turn-out of the journeymen wool-  
 combers occurred in Norwich; “the journeymen retired  
 “from the city to a heath about three miles off called Rack-  
 “heath, where they erected booths for themselves, and about  
 “three hundred of them being supported by purse clubs,

\* This corroborates De Foe’s Narrative (see ante, page 212.)—In the Gentleman’s Magazine, vol. 17, page 152, there is a description of the Norwich Weavers’ Alarum, a simple instrument generally used for awaking them early to pursue their labours.



“lived without any irregularities.” In a Norwich newspaper, the following announcement respecting the turn-out appeared:—

“Norwich at a full Court of Mayoralty held the 22nd day of August, 1752.

Whereas it has been represented to the Court, that the journeymen woolcombers who have lately turned themselves out of work, have by their agents sent into different parts of the kingdom, industriously propagated a report that no journeyman woolcomber can at present work with safety in this city, but will be liable to receive personal insults from other journeymen.

This is to certify that there are several woolcombers (more than one hundred) now at work in this city, who go about their business free and unmolested, and that any others who may choose to come and work here, shall be protected in their persons and property, as fully and effectually as other workmen inhabiting in this city, or elsewhere, can be by law.

By the Court.

LODGE.

N.B.—As the master woolcombers of this city never intended, they now publicly declare they will make no alterations of the usual prices for their work, but continue to give four shillings and fourpence for once combing twenty-four pounds of rough wool, and one penny per pound extraordinary for what is twice combed.”

The journeymen woolcombers also published many advertisements in the Norwich papers, dated from their camp at Rackheath, appealing to the masters, and stating that their rights were invaded by one Trye, whom they stigmatised as a ‘colt,’ an unlawful intruder, an informer, and one who had proved himself a thief, and charged honest men with the like, and insisting that until he was discharged they would not return to their work. The masters soon acquiesced in the demands of the woolcombers, for in the *Gentleman’s Magazine*, vol. 22, p. 476, under date October 3rd, it is related “that the Norwich woolcombers had, upon their masters sending for them and promising their usual wages, shared their bank among them, amounting to one pound five shillings per man, and returned to work to the *great joy of the city*.”

Let us now turn to the West-Riding of Yorkshire. It has before been seen that in the early part of the century, the shalloon manufacture flourished in this part of the kingdom. By the middle of the century, there is indubitable evidence that the calimanco and camblet trade formed a portion of the avocations of the inhabitants. The

making of both shalloons and calimancoes was then carried on at Leeds, Bradford, Halifax, Bingley, and Keighley, and had, in a large degree, been substituted for the making, in those localities, of woollen cloths, which had been followed for ages. Besides these parts, as well as many others in Yorkshire, were employed in spinning worsted yarn for Norwich and other seats of the manufacture, whither this Yorkshire-spun yarn was conveyed by land or sea-carriage. Halifax and some other places also engaged in the making of figured stuffs, 'drawboys.' The weaving of figures in stuffs by means of treddles is of very scanty range, and soon becomes very complicated. To remedy this, the weavers had recourse to the system of 'drawboys,' which, in a degree but very clumsily, performed what has since been so easily and wonderfully accomplished by the Jacquard engines; these, as will afterwards be mentioned, were first used in the worsted department at Halifax. Wakefield had also entered upon the tammy trade, afterwards so important an item of West-Riding manufacture, and here likewise had been established the principal wool mart of the district, where the chief of the wool dealers resided, and whither the worsted makers repaired to furnish themselves with wool, and after sorting, supplying the woollen branch with the short wool, as is the case in the present day at Bradford. Wakefield, situated so conveniently for the successful employment of capital in the production of worsteds, then promised to become the emporium thereof in the north; but these advantages were, as afterwards mentioned, neglected in later times and lost to the town.

Both the worsted producers of the south and north of England, readily co-operated in detecting and remedying any proceeding which unfavourably affected their business. Considerable agitation prevailed accordingly among them in the year 1752, arising from the excessive frauds committed by the wool growers in branding their sheep, and winding the wool, practices against which from time to time loud remonstrances had been made. But now it appears that the evil had increased to such an alarming length as to very

seriously injure those engaged in working the wool. They alleged that about six pounds in each pack of wool was wasted by means of the pitch and tar used in the brands; and that a great loss accrued also from dirt, refuse, &c., being wound up in the fleeces. Petitions to redress this grievance were presented to Parliament from the principal towns engaged in the woollen and worsted business. From the enumeration of these places set out in the Report of the Select Committee of the House of Commons, appointed to inquire into the subject, the following are extracted, showing the localities engaged in the weaving of worsteds, and the particular kinds produced. The Committee reported that a petition had been received from the manufacturers of worsted yarn, broad cloth, camblets, calimancoes, stuffs, and other woollen goods in the town and parish of *Leeds*; from the woolcombers, worsted weavers, and other manufacturers of wool in the city of *Norwich*; from the serge makers of *Culmstock*, in Devonshire; from the manufacturers of worsted yarns, bays, &c., in the ancient borough of *Colchester*; from the manufacturers of worsted yarn, camblets, and stuffs in *Wakefield*; from manufacturers of worsted yarn, says, &c., in the county of *Suffolk*; from woolcombers and stuff makers in *Cirencester*; from the shalloon and calimanco makers, and makers of other woollen goods in *Bradford*, *Keighley*, *Bingley*, and *Colne*; from the stuff makers of *Tetbury*, in Gloucestershire; from serge makers and drugget makers of *Wellington and Milverton*, in Somersetshire; from the woolcombers and worsted weavers of *Coventry*; the master weavers of *Kidderminster*, and the serge makers of *Honiton* and *Tiverton*, in Devonshire. There is also a petition from Halifax, but it is from the ‘merchants, woolstaplers, and manufacturers, and dealers in woollen goods,’ and contains no direct mention of persons employed in the worsted trade. Among the witnesses examined before the Committee stands Mr. Joseph Rayner, of Leeds, merchant, who stated that he was of opinion that the quantity of wool grown in Great Britain amounted to 600,000 packs, (a most preposterous statement!) and that the price had risen from ten shillings to seventeen shillings a tod. Mr. John Hustler, woolcomber and sorter of



wool, and Mr. Edward Gurney, of Norwich, also gave evidence in support of the allegations of these petitioners.\*

The fact of wool having much risen in price is clearly enough to be traced to the extension of its manufacture, which, since 1743, had been on the increase, for the quantity of wool produced in England from that year, when it began to advance in price, had continually enlarged at a prodigious rate far beyond whatever was the case before in this kingdom.

For the purpose of preventing as far as possible the illicit transportation of Irish wool and yarn abroad, Parliament had provided that those commodities should only be shipped under the superintendence of appointed officers, at the ports of Dublin, Waterford, Youghal, Kinsale, Cork, and Drogheda, and landed at Bideford, Barnstaple, Minehead, Bridgewater, Bristol, Milford Haven, Chester and Liverpool. Most of the yarn intended for the worsted makers came from Cork, and was disembarked at Bristol. The carriage thence to Norwich being very expensive and wearisome, obstructed the full prosperity of its trade. That portion of the Irish worsted yarn sent to Norwich seems to have been chiefly used in making calimancoes, and for this application it was exceedingly desirable, as with it a better kind of these goods could be made than with English wool. We are informed that these calimancoes were thirty-two yards in length, and that ten packs of Irish yarn would produce one hundred and eighty-four pieces, at about forty-five shillings per piece. It was calculated that the freight of these ten packs from Cork to Bristol would cost thirty shillings,† and that the land

\* The Committee of the House of Commons reported in favour of the manufacturers, and that all sellers of Wool should be obliged to clip off from every fleece before the shearing or winding thereof, the brand or mark thereon made with pitch or tar; that they should not put more than one fleece into one parcel, nor divide the fleece; and that provision should be made by law to prevent the winding or wrapping in any fleece, inferior wool.

† In a Pamphlet printed at the time under the title of "Considerations offered to the House of Commons, relating to the importation of snap and bay yarn from Ireland to Bristol," the writer though desiring to prove that Norwich people would not gain much by the change, admits that the land carriage from Bristol to Norwich, cost twenty shillings a pack. He states, that only about five hundred and twenty packs of this yarn were yearly used at Norwich, being when manufactured of the value of £21,580, but this quantity was much below the truth.

carriage from the latter port to Norwich would, on an average, amount to ten pounds. This latter item being, as alleged, a charge of three per cent. upon the value of the Norwich stuffs. Energetic endeavours were made, from time to time, to obtain for Yarmouth (the port of Norwich) the privilege of having yarn disembarked there. Finally, the concession, in the year 1752, was obtained, and Irish wool, woollen or bay yarn, woolfels, shortlings, mortlings, woolflocks, and *worsted yarn*, were, to a great extent, imported at Yarmouth, thus supplying the requirements of Norwich and Norfolk, and also with bay yarn the adjoining districts.\* At the same time after long and strenuous efforts, the Yorkshire worsted masters obtained a like concession, whereby Irish wool and yarn were permitted to be freely imported at Lancaster, whence they readily and easily reached the adjoining districts of Lancashire and Yorkshire, engaged in the stuff business.

In the ten years succeeding the year 1750, the production of stuffs waxed greatly in the West-Riding. Throughout many districts, where until lately the making of the coarse cloths of Yorkshire formed the occupation of the majority of the population, the clothiers engaged, with energy, in the comparatively new business of stuff-making. Halifax and Bradford much extended their operations therein, and even at Leeds, the very centre of the clothing country, the weaving of worsteds constituted no inconsiderable portion of its trade. Merchants had in abundance sprung up, who rode from town to town, and valley to valley, to purchase these goods, which were mostly shipped to the continent of Europe. A new road to wealth had been opened—the farmer either forsook the tilling of the ground to follow altogether the stuff business, or else carried it on as a domestic employment along with the cultivation of the land, and with thrifty habits, was often in an incredibly short time, enabled to purchase his homestead and farm. The art spread into the most remote dells, as well as in the towns and villages of the south-western portion of the Riding. All ranks hastened to learn, in some of its branches,

\* 25 Geo. II. Quoted in History of Norfolk, vol. 10. p. 191.



the worsted business—some as sorters, others as combers, more as weavers, whilst the women and children were taught spinning, and for the instruction and employment of the latter, numerous schools for teaching spinning were established. Although the art of making stuffs had been practised in the Riding to a considerable extent since at least the commencement of the century, yet in the interval between the years 1750 and 1760, a new era opened, and from that point the manufacture began to exhibit some indications of that stature and dimensions which, in later days, it has attained. It, year by year, increased. Large quantities of northern made stuffs were shipped to Holland by way of Hull. In the year 1765, about one thousand packs of the produce of Yorkshire and Norfolk looms, were imported at Rotterdam.\* To Spain also, and Portugal, Yorkshire stuffs were exported in considerable amounts, and likewise to America by way of Liverpool.

In Norwich, likewise, at the commencement of the reign of George III., the worsted manufacture continued in a vigorous and thriving state. On the failure, to a great extent, as before noticed, of the home demand for Norwich crapes and goods, the stuff merchants cultivated the export trade more than formerly, and now transacted a very extensive business in Holland, Flanders, Germany, Italy, Spain, and Portugal, (and through them to the great markets of South America,) where they established agents and correspondents, and employed numerous travellers, as well as often taking journies thither themselves. There is preserved a list of various articles made about this time by one Norwich house, printed in English, French, and Italian, which will afford a notion of the sort of goods furnished by a Norwich stuff merchant of those days; and may be compared with our present trade circulars. The following is the list in English, referred to above,—“Single camblets, No. 1 to 12. Double

\* In 1765, the Exports of Manufactures from Wool to Holland, amounted to above £320,000. It is stated, that at this period, serges to the value of £10,000 were sent to Holland from Aberdeenshire, so that the Scotch worsted weavers still to some extent competed with us there.



“ditto, No. 13 to 24. Hairbines, No. 25 to 28. Single  
 “cambletts—watered, striped, and shaded, 29 and 30—Cam-  
 “blettees, striped, checked, and clouded, 31 to 33—Poplins 34.  
 “Calimancoes, striped, flowered, and brocaded, 35 to 37.\*  
 “Sattins ditto, 38 to 41—Tapizadoes—Rosettas—Mecklen-  
 “burghs—Ditto with silk flowers—Crusades—Florettes—  
 “Corderetts—Diamantines—Chiveretts—Esteretts—Martini-  
 “ques—Bell-Isles—Ladines—Russalines—Taboretts—Ditto  
 “brocaded—Blondines—Brussels—Dresdens—Grandines—  
 “Harlequins checked. *James Tompson and Sons, of Nor-  
 “wich.*”†

The East India Company also purchased largely of Nor-  
 wich goods, such as camblets, and in particular their purchases,  
 owing to the stoppage of French commerce to the East from  
 the war, increased very greatly in the year 1762.‡ But the  
 prosperity of Norwich, soon after the accession of George III.,  
 began to decline. This was partly owing to the rapid in-  
 crease of the Yorkshire manufacture, and partly owing to  
 the war which broke out between England and her American  
 colonies. The merchants, in fear of the privateers, lessened  
 their exports, and commerce became crippled. During this  
 state of affairs, we have from the pen of a writer of much  
 influence in his day, Arthur Young, a very comprehensive  
 view of the manufactures of Norwich in 1771. In that  
 year he undertook a tour through the south-east, and  
 southern parts of England, and by personal inspection, and  
 conference with the principal tradesmen, well prepared  
 himself for drawing up an account which will be read

\* In Chambers' Cyclopaedia, (Rees' Edit.) there is the following account of the  
 calimanco made last century—

“It is commonly woven wholly of wool, there are some, however, wherein the  
 “warp is mixed with silk, and others with goats' hair. There are calimancoes of all  
 “colours, and diversely wrought.—Some are quite plain, others have broad stripes  
 “adorned with flowers. Some with plain broad stripes; some with narrow stripes, and  
 “others watered. This is a considerable branch of the Woollen Manufacture in  
 “England, both for home wear and exportation.”

† The East Anglian Newspaper, Feb. 21st, 1832, where it is also mentioned that  
 the Norwich Manufacturers were Merchants as well.

‡ In 1762, the East India Company exported Manufactures from Wool to the  
 amount of £386,625, above that of the four preceding years.

with interest. It has before been remarked that the prosperity of Norwich was at its zenith between the years 1743 and 1760.

The city of Norwich (writes Young) is one of the most considerable in England, after London; it stands on more ground than any other, but in number of inhabitants some others assert an equality. By an accurate account taken a few years ago, the number reckoned by the houses, amounted to 40,000; but by the bills of mortality, only to 36,000; the average, therefore, of these (38,000) may be taken as more probable than either.

The staple manufactures are crapes and camblets, besides which they make in great abundance, damasks, satins, alopeens, &c., &c., &c. They work up the Leicestershire and Lincolnshire wool chiefly, which is brought here for combing and spinning, while the Norfolk wool goes to Yorkshire for carding and cloths. And what is a remarkable circumstance, not discovered many years, is, that the Norfolk sheep yield a wool about their necks equal to the best from Spain; and is in price to the rest, as twenty to seven. The earnings of the manufacturers are various, but in general high. Men, on an average, do not exceed five shillings a week; but then many women earn as much, and boys of fifteen or sixteen likewise the same. Draw-boys, from ten to thirteen, two shillings and sixpence a week. Pipe-boys and girls, from five to nine years old, nine-pence. Combers, on an average, seven shillings. Dyers, fifteen shillings. Hot-pressers, fifteen shillings. Women, by doubling yarn, two shillings. Ditto, silk, eight shillings. Ditto, by spinning, two shillings and sixpence, to three shillings.

The weaving man and his boy, who now earn in general seven shillings a week, could earn with ease eleven shillings, if industrious. But it is remarkable, that those men and their families, who earn but six shillings a week, are much happier and better off than those who earn two shillings or three shillings extraordinary; for such extra earnings are mostly spent at the ale-house or in idleness, which prejudice their following work. This is precisely the same effect, as they have found, when the prices of provisions have been very cheap; it results from the same cause. And this city has been very often pestered with mobs and insurrections, under the pretence of a high price of provisions, merely because such dearness would not allow the men that portion of idleness and other indulgence which low rates throw them into.

In the management of the poor there was one circumstance that deserves noting. Previous to the year 1727, the rates throughout the city were immediately burthened with weekly allowances to the poor of one shilling and sixpence, two shillings, two shillings and sixpence, and three shillings a family; in which manner £1200 a year was given. A resolution was taken, in that year, to strike them all off; it was accordingly done, and nothing ensued but murmuring, no ill consequence at all. Seven hundred or eight hundred souls are kept in the workhouse of this city for £7000 or £8000 a year in all expences.

In respect to the present state of the manufacture, it is neither brisk nor very dull. They could execute more orders than they have, and some among them complain, because they have not so great a trade as during the war; for *then* they could not answer the demand, it was so uncommonly great (from 1743 to 1763 was their famous era.) This was, however, owing in some measure to many

manufacturers exporting so largely on speculation, that the markets have been over-stocked ever since, and have occasioned that falling-off which has been perceived since. Indeed, the unfortunate difference subsisting between Great Britain and her colonies, is a great injury to them. They now do not send anything to North America, but much to the West Indies. Their foreign export is to

Rotterdam	Trieste	Barcelona
Ostend	Naples	Hamburgh
Middleburgh	Genoa	All the Baltic, except
All Flanders	Cadiz	Sweden, where they
Leghorn	Lisbon	are prohibited.

In seventy years last past, the manufacture is increased as from four to twelve.

During the last war Norwich supplied the army and navy with four thousand recruits, but her manufactures did not suffer in the least, for they carried on more trade than ever. The truly industrious do not enlist, and as to the idle, the greatest favour that can be done to any place is, to sweep them all away.

They are in this city curious in building with flint; they cut it in regular squares, and form as neat joints as with the best bricks. The Bridewell is thus built, and so well executed, that it is worth a traveller's notice.

The general amount of the Norwich manufacture may be calculated thus:—

A regular export to Rotterdam by shipping every six weeks,	£
of goods to the amount of, <i>per annum</i> , .. ..	480,000
Twenty-six tons of goods sent by broad-wheeled waggons weekly to London, at £500 a ton on an average, thirteen thousand tons <i>per annum</i> : value .. ..	676,000
By occasional ships and waggons to various places, calculated at .. ..	200,000
	<hr/>
	£1,356,000

Upon a re-consideration of this table, it was thought that the £676,000 by waggons, was rather too high: suppose, therefore, only ten thousand tons, it is then £520,000, and total £1,200,000.

Another method taken to calculate the amount, was by adding up the total sum supposed to be returned annually by every house in Norwich; and this method made it £1,150,000. This sum, coming so near the other, is a strong confirmation of it. A third method taken was, by various ways, to calculate the number of looms; these were made twelve thousand; and it is a common idea, in Norwich, to suppose each with all its attendants works £100 per annum; this also makes the total £1,200,000, which sum, upon the whole, seems to be very near the truth.

Respecting the proportion between the original material and the labour employed upon it, they have a very sure and easy method of discovering it. The average value of a piece of stuff is fifty shillings: it weighs six pounds, at ten-pence a pound, which is five shillings, so the material is a tenth of the whole manufacture.

					£
Total	..	..	..	..	1,200,000
A tenth	..	..	..	..	120,000
					<hr/>
					£1,080,000



In which is included the profit of the master manufacturer. There is no occasion to separate that from the gross sum, as it is, in fact, *labour*, as much as the manual part. All the people, maintained and employed by a manufacture, are the same in a public view, whether they earn £10,000 a year, or but £10.

The material point remaining is, to discover how many people are employed to earn the public one million per annum; and for this calculation I have one datum, which is to the purpose. They generally imagine in Norwich, that each loom employs six persons in the whole; and as the number is twelve thousand, there are consequently seventy-two thousand people employed by this manufacture. And this is a fresh confirmation of the preceding accounts; for I was in general told, that more hands worked out of Norwich, for many miles around, than in it. £1,200,000, divided by 72,000, gives £16 each for the earnings of every person.

This, I must confess, appears to me a very large sum; for I have no conception of all the persons employed earning £16 a year, which is a shilling a day; if therefore any mistake is in the preceding account, it must be in the number of looms. The total amount of the manufacture is taken from clear facts, (not suppositions;) there must consequently be looms sufficient to work to that amount. £16 a year may not be *much* above the truth, though probably *something*; for we should consider that women and boys of fifteen or sixteen earn as much as most of the men; whereas, in various other manufactures, with which I am acquainted, they do not nearly equal them; and we should further consider, that we include in this £16 a year, the whole profit of the master manufacturer. The deviation, therefore, from fact, cannot be very considerable; for, if the master manufacturer's profit is calculated at fourteen per cent., and deducted accordingly, this £16 a year is thereby reduced to about £11 11s. a year.

It may, therefore, be taken as no contemptible fact, that seventy or eighty thousand people employed in a manufacture, whatever it may be, will earn £1,000,000 a year. I say *whatever it may be*, because I conceive that the variations of earnings in the general number not to be very great. Provisions are pretty much on a par, and few of them more than work to live.\*

The Norwich weaver obtained his yarn chiefly from the country spinners—from the counties of Norfolk, Suffolk, Essex, Cambridgeshire, and Bedford, “where the yarns were  
“spun in the cottages of the peasants, and sometimes in the  
“kitchen of the farmer, under the management of a number  
“of master combers, men of property and intelligence residing  
“in various parts of these counties, but whose head quarters  
“were Norwich and Bury. The wool after being combed  
“was sent out by travellers in tilted carts, who left it with  
“the spinners in one journey, and took back the yarn, paying  
“the amount of spinning, at the next. There was a certain

\* Arthur Young's Tour to the East of England, in the year 1771, vol. 2, p.p. 74-82. Letter XII.

“quantity to be done for a shilling. This was always the  
 “the same ; but the payment varied according to the demand,  
 “from ten-pence to fifteen-pence for the shilling. The price  
 “of the shilling was the instrument that measured the cot-  
 “tager’s comfort. I suppose that the spinning of a wife and  
 “three or four children amounted to as much, or more, than  
 “the wages of the husband.”\* It is mentioned that an in-  
 credible number of persons rose to affluence as ‘yarn makers.’

In this elaborate view, by Young, of the Norwich trade, the most prominent features are, that crapes and camblets constituted its staple articles of production ; that by a great change of late, Yorkshire clothiers purchased Norfolk wool to make cloth, whilst Leicestershire and Lincolnshire supplied the main of the material for the emporium of worsteds ; that in the enumeration of wages those of weavers did not, on an average, exceed five shillings a week, and combers seven shillings—an immense lowering of their earnings in a few years ; that the industrious character of the workpeople of the city, noticed by former travellers, seems to have depreciated ; that in consequence of the quarrel with our American colonies, the trade did not retain its former flourishing condition ; and that a reaction, to some extent, had occurred, owing to the Norwich merchants having overstocked the foreign markets during the briskness of the demand in that quarter. But by far the most important and novel portion of Young’s letter is that containing the estimate of the value of the Norwich manufactures, and he apparently took much pains to arrive at an accurate conclusion. He adduces three methods to ascertain the amount—first, by the export to Holland, whence it seems that goods sent thither were shipped direct from Norwich *via* Yarmouth ; secondly, by the number of waggons employed in the land carriage to London, and allowing two tons to each waggon, which taking into consideration the state of the roads, is quite sufficient, thirteen waggons plied weekly between Norwich and London, and thither the larger portion of these stuffs was transported ; and thirdly, by the shipping and

\* ‘Senex’ in the East Anglian Newspaper, Feb. 14th, 1832.



waggons to other places. The immense amount of traffic in worsteds to Holland will at once arrest the attention. It seems, that nearly all the remainder of the production of Norwich and Norfolk looms not shipped to Holland, was forwarded to London and thence distributed over the kingdom, and to Spain, Portugal, and Italy.\* He then tests the result of his first calculation, by other two estimates. It may, therefore, be admitted, that the judgment he formed as to the yearly worth of Norwich textile productions, was not hastily arrived at, but very well-considered, representing the current opinion of the most eminent manufacturers and merchants of the city, and one which he tried by the best methods in his power to ascertain its general correctness. When at this period of comparative declension the value of Norwich stuffs reached, according to this authority, £1,200,000; what was the amount in the day of prosperity?† Whatever opinion may be arrived at respecting the value above ascribed, there can be no hesitation in concluding that sixteen pounds a year is more than in truth can be set down as the average earnings in Norwich

\* From the earliest times, as well as now, by far the greater portion of the woollen and worsted fabrics exported from England, was shipped from the port of London. In 1775, the value of these sent abroad from London, amounted to the very large sum of £2,247,570, and from all the outports only £1,972,602, and in that year the excess of London was much less than in some other years. A large number of cloth and stuff merchants then resided in London, who either carried on business on their own account, or acted on commission as agents for the merchants and manufacturers of Norwich, Sudbury, Coventry, and the North of England. Some of these merchants went periodically to the cloth and stuff manufacturing districts to purchase their stocks. The foreign merchants were also congregated in the city. All these causes contributed, among others, to render it the great entrepôt for woollen and worsted goods. London and the neighbourhood stood famous for dyeing and finishing stuffs in the best style of that period.

† The following extract is taken from Postlethwayt's Dictionary of Trade, (published in 1766,) under the head 'Norwich.'—"Norwich manufactures consist of a "great variety of stuffs, as says, bays, serges, shalloons, also druggets, crapes, and "other curious stuffs. All hands are daily employed, and even children earn their "bread. A calculation was *lately* made from the looms at work in the city only, "and not less than 120,000 people employed in and about the town, those who spun "the yarn included." In 1766 the trade of Norwich had begun to decline. But if this statement and Young's are both correct, there must have been a tremendous fall in that short interval. Of course Young is considered a far more accurate authority than Postlethwayt, on whom not much reliance can be placed.



at this date, even including masters' profits. For in Yorkshire, as will hereafter be seen, the average earnings amounted only to fourteen pounds each, and there, undoubtedly, wages were at least equal to those in Norwich. The latter place having, within the previous thirty years, much improved the quality of its stuffs, it is probable, that the assumption of the value of the labour being ten times that of the material, is not incorrect as to the finer qualities of goods.

Young, who visited the manufacturing districts of Suffolk and Essex, and other portions of the south of England, also describes their condition, the quality of goods made, and the rate of wages.\* It is so exceeding rare to be able to obtain from authors any reliable information respecting the latter point, that his table of wages derives, from that reason, an additional value. From his description, it is clear that Sudbury had, in a large degree, taken from Norwich the fabrication of burying crapes, and was also engaged in the weaving of says and bunting, which were chiefly made for the London market, and some for exportation. The lamentable condition of some manufacturing towns at present, is not a peculiar feature of our times, for Sudbury is described as 'an exceedingly dirty but great manufacturing town.'

"At Lavenham," says he, "is carried on a very considerable manufacture of says and calimancoes; at which the workmen earn, on a medium, five shillings and sixpence, or six shillings a week, and many woolcombers who earn twelve shillings, and fourteen shillings." p. 64.†

\* Arthur Young's Six Weeks' Tour through Southern Counties of England, Anno 1772.

† Even so early as the days of Henry VIII., Lavenham, Sudbury, and Hadleigh, were very largely engaged in Manufactures from Wool, for it is related by Rapin, that in the year 1525, an Insurrection broke out in Suffolk, where the *weavers*, and other artisans assembled out of those towns, and others, to the number of about four thousand, which strikingly denotes the great extent of the manufacture in those places at that date, when the population of the kingdom was at so low an ebb. We have before seen that in the reign of Edward III., Sudbury had become an important seat of the worsted trade, and during the persecutions raised by the Duke of Alva, many Flemish worsted weavers settled there.

“From Hadleigh, I continued my journey to Sudbury, an  
“exceeding dirty but great manufacturing town, I made such  
“inquiries as were most likely to gain some good information  
“relative to their manufactures; and my intelligence ran as  
“follows:—It contains a great number of hands who earn  
“their livelihood by working up the wool from the sheep’s back  
“to the weaving it into says and burying crape, which are  
“their principal articles. The spinning is here a poor busi-  
“ness, a stout girl of fifteen or sixteen not being able to earn  
“above sixpence a day. But the combing is the best of all  
“their employments, yielding from twelve to fourteen shil-  
“lings a week. The weavers of the says and burying crape  
“earn from seven to nine shillings, but the first price the  
“most common. Besides these articles, they weave ship-flags  
“which employ the women and girls of seven or eight years  
“of age, yielding the latter about two shillings and sixpence  
“or three shillings a week. The whole manufactory works  
“chiefly for the London markets, but some says go down  
“their river (which is navigable from hence to Manningtree)  
“for exportation.” p. 70.

“In Henningham, there is a woollen manufactory carried  
“on of bays and says, at which the weavers earn about seven  
“shillings a week the year round, and combers twelve and  
“fourteen shillings.” p. 72.

“From Gosfield, I proceeded to Bocking and Braintree,  
“places adjoining and full of manufacturers who work up says  
“in general, and some druggets. By all the accounts, I could  
“gain of the weavers, I found that they earned, on an average,  
“about nine shillings a week; woolcombers about twelve  
“shillings; stout girls fifteen or sixteen years old, fourpence  
“or fivepence a day at spinning; and girls of seven or eight,  
“a shilling a week for rolling the weavers’ quills: all these  
“prices are lower than the Sudbury ones. They further  
“informed me, that in summer they did whatsoever hus-  
“bandry-work they were able, being better paid for it, such  
“as hoeing turnips and wheat, and making hay, and har-  
“vesting.” p. 76.

After describing the condition of the agricultural labourers, he observes, “I shall now pass on to manufacturers. Of their earnings, I shall give a little sketch:—

	s.	d.
Lavenham, says and calimancoes earn per week } on a medium, the year round .. .. }	5	9
Sudbury, burying crape, &c. .. ..	7	6
Heddingham, bays and says .. ..	7	0
Braintree, says and druggets .. ..	6	0
Witney, piece-goods and blankets .. ..	11	0
Gloucester, pins .. ..	11	0
Wilton, carpets .. ..	11	0
Salisbury, flannels and linseys .. ..	8	0
Romsey, ratinets .. ..	9	0
Woolcombers everywhere on an average ..	13	0
Medium earnings in the east of England from } Lavenham to Braintree inclusive .. .. }	6	6
In the west, at Witney and Gloucester ..	11	0
In the south, Wilton, Salisbury, and Romsey	9	4
<hr/>		
Medium of Labourers' pay in the east, about } the above manufacturing towns and neigh- } bourhood .. ..	8	0
Ditto, around those in the west .. ..	5	10
Ditto, those in the south .. ..	6	0
<hr/>		
General medium of manufacturers .. ..	8	5
Ditto, of labourers .. ..	7	9
<hr/>		
The former superior by .. ..	0	8”
<hr/>		

It is remarkable that he allots a higher rate of wages to the weavers of the country adjoining Norwich than in that city, where the finest goods were made. Excluding Sudbury, where burying crapes to some amount were fabricated and the wages high, he sets down a greater rate of wages to the artisans of Lavenham, Heddingham, and Braintree, than those of Norwich, where he writes the weavers only earned on a medium five shillings a week. Woolcombers obtained,



compared with others, very high wages. Formerly the operatives engaged in the stuff business gained better reward for their labour than those occupied in cloth making. Now the reverse was the case: the wages of the clothiers were very much higher. This state of things seems to indicate that the labour market in the worsted districts was overstocked, and that production had exceeded its due and prudent bounds.

Turning to the West-Riding of Yorkshire, it will be found that there, as well as in the other worsted districts, the stuff business laboured under depression. Under these circumstances, the manufacturers in all parts of the kingdom viewed with exceeding alarm and uneasiness, an attempt made in the year 1774, by the linen manufacturers of Ireland and Scotland, to obtain an additional duty upon foreign linen imported into England, namely, to increase the rates on German and Russian linen; to lay an additional duty on Silesian 'tabling'; and, for the purpose of encouraging the linen manufacture in Ireland and Scotland, to grant a *bounty* on their painted and stained linen. The English manufacturers from wool, well knowing that if such a measure should be adopted, the foreign powers sending us linen would retaliate by laying additional imposts upon our woollens and worsteds exported thither, took most energetic measures to frustrate this attempt. A meeting convened at Lincoln, principally through the instrumentality of Governor Pownal, a noted character of the day, was attended by about fifty gentlemen chiefly peers and members of Parliament, interested in the growth and manufacture of wool. Numerous deputations were sent from the chief manufacturing places in the kingdom. At this meeting proofs were exhibited that the artisans of Norwich were in an impoverished state, and that the poor rates for that city had increased from £3,754 in the year 1764 to 11,000 in 1773; that the expenses of the poor in the workhouse of the city of Exeter had increased from £1,300 in 1766 to £1,924 in 1773. It was also demonstrated that the exports of manufactures of wool, from Exeter, had usually amounted to £700,000 or £800,000, of which the exports to Germany were about

£300,000, but that within seven years, the amount had been reduced to half, and in the last year, 1773, amounted only to £130,000. This was, indeed, an excessive defalcation in the principal trade of Exeter, whilst in the West-Riding of Yorkshire great stagnation likewise prevailed in trade. The poor rate for Bradford township in 1771 amounted to £392; in 1772 to £408; and in 1773 to the sum of £488. The like also was reported of the township of Halifax, in the first of these years, the poor rate stood at £887; in the second year to £914; and, in 1773, it reached the sum of £1,000. Here is evidence sufficient of the decline in the trade of these two great worsted manufactories.

The meeting resolved to petition Parliament against the proposed addition of duty upon imported linens, and to use every endeavour to prevent it. From the stuff makers of the West-Riding of Yorkshire, the following petition numerously signed was forwarded.

#### STUFF MAKERS' PETITION.

To the Honourable the Commons of Great Britain in Parliament assembled :—

The Humble Petition of the Manufacturers of Worsted Stuffs in the West-Riding of the County of York :—

Sheweth,

That your Petitioners observe from the votes of this Honourable House, that a Committee is appointed to inquire into the present distressed state of the linen manufactures of Great Britain and Ireland.

That your Petitioners having long experienced the attention of Parliament to the distresses of the subject, are encouraged to hope they may be admitted to lay before this Honourable House a state of the distresses in which they are at present involved.

That the demand for their manufactures is, and for some years hath been, so much on the decline, notwithstanding wages have lowered twenty per cent. at least, that the greater part of your Petitioners are now unable to find employment for themselves, and their numerous poor servants adequate to their necessary support; and that from the great stock of manufactures unsold, and other reasons, they have just grounds to fear that there will be many more of them without employment.

Your Petitioners therefore humbly pray, &c.

A Committee of the House of Commons having been appointed to investigate and report on the subject, the manufacturers prepared a number of statements and tables to exhibit the progressive decay of their trade, and diminution

of wages and profits. The statements (hereafter printed and numbered I., II., III.,) submitted to the Committee respecting the stuff manufactures of the West-Riding are very valuable documents, having been prepared with great care and accuracy by Thomas Wolrich, Esq., of Leeds,\* and exhibit a full and comprehensive view of the condition of the manufacture; and are the more valuable as being the only ones during this century upon which implicit confidence can be placed. They may profitably be compared in many parts, such as the value of the manufacture, the number of workpeople, the rate of wages, &c., with Arthur Young's almost contemporaneous details respecting Norwich.

## No. I.

## “AN ACCOUNT OF THE STATE OF THE STUFF MANUFACTURE.

“In the town of Halifax and the neighbourhood, paid for manufacturing one piece of stuff of the value of thirty-five shillings, in 1771:—

	£	s.	d.	
Combing, 2d. per pound	0	1	11½	
Weaving .. .. .	0	6	0	
Warp spinning, 6½ pounds to 18 hanks, 2 threads	}	0	6	1½
Weft spinning, 3 pounds to 24 hanks .. .. .				
Warping and winding	0	0	8	
	<hr/>			
	1	0	7	
Wool .. .. .	0	12	0	
	<hr/>			
Cost ..	£1	12	7	Sold for £1 15s. 0d.
	<hr/>			

In 1774, the piece cost—

Wages .. .. .	0	16	3	
Wool. . . . .	0	13	0	
	<hr/>			
	£1	9	3	Sold for £1 10s. 0d.
	<hr/>			

\* These documents are taken from Mr. Wolrich's Papers, printed by Bischoff, in vol. 1, p. 185, *et seq*:



To those who have their spinning most at a distance of twenty, thirty, or forty miles from Halifax, it will cost one shilling less.

The poor spinners in the west have for spinning eighteen hanks, in 1774, less by fourpence than in 1771.

In general one comber will employ fourteen spinners, and fourteen spinners will employ three weavers and a-half or thereabouts. Combing is fallen from twopence to one penny three farthings, and weaving from six shillings to five shillings per pound both at home and in the country. Spinning has fallen, viz :—eighteen skeins at home from eleven-pence to eight-pence, and twenty-four skeins from one shilling and twopence to eleven-pence. In the country, warp and weft yarn has fallen by spinning rolls.\*

The following are the prices since 1771.—

PRICES.

	At & near Halifax.				In Lancashire & at a distance.			
	Warp 18 Skeins or Hanks		Weft 24 Hanks.		Warp 18 Hanks.		Weft 24 Hanks.	
	s.	d.	s.	d.	s.	d.	s.	d.
1771, August 21..	0	11	1	2	0	10	1	1
1772, October 26..	0	10	1	1	0	9	1	0
1773, March 1 ..	0	9	1	0	0	8	0	11
1774, March 7 ..	0	8	0	11	0	6	0	9

FALL OF WAGES.

Of combing everywhere..	$\frac{1}{8}=12\frac{1}{2}$	per cent., or $\frac{1}{18}$	of the employ of the poor.
Weaving everywhere ..	$\frac{1}{6}=16\frac{1}{4}$	per cent., or $\frac{1}{18}$	do. do.
Spinning warp at a distance	$\frac{4}{10}=40$	per cent., or $\frac{5}{18}$	do. do.
Do. at home ..	$\frac{3}{11}=27$	per cent., or $\frac{2}{18}$	do. do.
Weft at a distance .. ..	$\frac{4}{13}=30$	per cent., or $\frac{5}{18}$	do. do.
Do. at home.. ..	$\frac{3}{14}=28$	per cent., or $\frac{2}{18}$	do. do.

1

So that on an average the fall of the wages of the poor will be about twenty-eight per cent.”—(Information from John Sutcliffe, of Holdsworth, Stuff-maker.)

\* Do ‘Spinning Rolls’ here mean, that spinning was done by the new invention of rollers? If so, it must indicate, that the cessation of the spinning of cotton in Craven and other parts had caused labour in spinning worsted to be more abundant; for I am not aware that at this early period worsted was spun by machinery.

## No. II.

## “GENERAL ESTIMATE OF THE YORKSHIRE WOOLLEN MANUFACTURE. EASTER, 1772.

## ANNUAL AMOUNT OF THE MANUFACTURE OF CLOTHING OR SHORT WOOL.

	£	s.	d.
Broad cloths, narrow cloths, bays, kerseys, half-thicks, blankets, hose, Colne serges and plains, penistones, kerseys, hats, hose, sheets, and coverlets . .	1,869,700	15	7½

## ANNUAL AMOUNT OF COMBING WOOL, viz:—

Shalloons, calimancoes, russells, tammies, single camblets, or camblettees, prunells, and moreens, all made of single yarns; everlastings, figured & flowered amiens, serges de Nismes, and serges de Rome, whose warps are of double yarn, and various other articles. . . . .	1,404,000	0	0
	£3,273,700	15	7½

## EXPORT AND HOME CONSUMPTION OF MANUFACTURES OF CLOTHING OR SHORT WOOL, AND LONG WOOL.

	Export.			Home Consumption			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.
Clothing or short wool }	1,248,741	12	10	620,959	2	9½	1,869,700	15	7½
Long wool ..	1,123,200	0	0	280,800	0	0	1,404,000	0	0
	2,371,941	12	10	901,759	2	9½	3,273,700	15	7½

## MATERIALS AND LABOUR IN MANUFACTURES OF SHORT WOOL AND LONG WOOL.

	Materials.			Labour.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.
Short wool	⅓ 623,233	11	10½	⅔ 1,246,467	3	9	1,869,700	15	7½
Long wool	⅔ 234,000	0	0	⅓ 1,170,000	0	0	1,404,000	0	0
	£857,233	11	10½	2,416,467	3	0	3,273,700	15	7½

“N.B. This estimate was made conformable to my idea  
“of a proper exhibition at the bar of the house. T. W.”

No. III.

“PARTICULAR ESTIMATE OF THE YORKSHIRE WOOLLEN MANUFACTURES, INCLUDING THE ROCHDALE BAYS, IN 1772.

“The district bounded on the north by Settle, on the south by Saddleworth, distant from each other forty miles; bounded on the east by Leeds, and on the west by Haslingden, in Lancashire, distant from each other thirty-five miles. The space of ground occupied by manufacturers, equal to a square of thirty miles, about one-half of which are moors and waste ground.

THE ANNUAL AMOUNT FROM CLOTHING OR SHORT WOOL.

	£	s.	d.	£	s.	d.
Broad cloth, mixed and white 112,370 pieces = 3,232,913 $\frac{1}{4}$ yards, at 5s. per yard ..	808,228	6	3			
Ditto milled or made in Lancashire, presumed of the value of .. ..				50,000	0	0
				<hr/>		
				858,228	6	3
Narrow cloth 95,539 pieces } = 2,377,517 $\frac{1}{2}$ yards, at 4s. 3d. }				505,222	9	4 $\frac{1}{2}$
				<hr/>		
				1,363,450	15	7 $\frac{1}{2}$
Bays and other Rochdale woollens, 124 pieces at 50s. a piece .. ..	310,000	0	0			
Deduct and carry to the manufacture of combed wool for worsted yarns, the warp of broad bays				30,000	0	0
				<hr/>		
				280,000	0	0
Kerseys, 40,000 pieces at 40s. a piece .. ..	80,000	0	0			
Half-thicks, 25,000, 25s. per piece .. ..				31,250	0	0
				<hr/>		
				111,250	0	0
Blankets, 20,000 striped and plain, at £3 10s. ..				70,000	0	0
Hose .. ..	20,000	0	0			
Colne serges and plains, penistones, kerseys, hats, horse-sheets, and coverlets	25,000	0	0			
				45,000	0	0
				<hr/>		
				1,869,700	15	7 $\frac{1}{2}$
						[OVER.]



## FROM COMBING OR LONG WOOL.

In this branch are employed	3,900 combers.	
Whose labour weekly produces, allowing for sickness and other necessary avocations, each. . . . .	36 pounds of wool.	
		<hr/>
		140,400
Allow two weeks for holiday per annum, and multiply by . . . . .	50	
		<hr/>
		7,020,000 pounds of wool.
The average value of 1 pound of combed wool manufactured, 4s. . . . .	4	
		<hr/>
		1,404,000 0 0
		<hr/>
Total amount . . . . .		£3,273,700 15 7½
		<hr/>

The variety of stuffs made from long wool, and the fluctuations of the demand for each sort, discourage the hope of precision in the calculation of the quantities of each; it is, however, attempted in this manner:—

	£
20 Skein for shalloons . . . . .	450,000
21 „ calimancoes and russells . . . . .	280,000
22 „ everlastings, figured and flowered } amiens, serges de Nismes, and other double stuffs . . . . .	350,000
23 Tammies . . . . .	110,000
16 Camblets, camblettees, prunells, rosettas, } and anteloons . . . . .	100,000
15 Moreens, harrateens, shags, and sundry } other articles . . . . .	84,000
16 The warps of broad bays, deducted from the } Rochdale manufacture. . . . .	30,000
	<hr/>
	£1,404,000”
	<hr/>

These estimates afford room for many observations. One is forcibly struck with the magnitude of the manufacture, the growth of this century, for scarcely had the seed been cast into the soil at the commencement of it. Here we have undoubted evidence that the value of the stuffs made in the West-Riding equalled those made in Norwich, Norfolk, and the surrounding districts, the ancient and chosen seat of the manufacture. Arthur Young, as just before quoted, calculated the latter at not more than £1,200,000, and in the West-Riding they reach to the enormous sum of £1,404,000, very nearly equalling that of cloths even including bays, Rochdale goods, Colne serges, &c., which were in some respects closely allied to the worsted branch, having at least worsted yarn in their composition. Then again, whilst cloth making only doubled in the labour the worth of the wool, that of stuffs amounted to five times as much, emphatically pronouncing the importance of the manufacture as an element of subsistence. Not fewer certainly than 84,000 persons could be engaged in its processes. There were close upon 4,000 combers, and if each employed fourteen spinners, and each weaver four spinners, which is the calculation made by John Sutcliffe, this would amount to 74,000 workpeople engaged, namely, 4,000 combers, 56,000 spinners, and 14,000 weavers. But a large portion of the spinners were children, which would increase the number of spinners to the weavers, and in addition, there were the sorters, drawboys, dyers, pressers, and other persons employed in connexion with the main processes, making up the aggregate to at least 84,000, which undoubtedly is a very moderate computation, and below the actual numbers. In the Norwich trade, only 72,000 persons are presumed to have been in like manner employed.

The sum set down for the West-Riding as the proportion of labour (£1,170,000) yields to each person, children and adults, combers, spinners, and weavers, £14 a year; and it must also be remembered, that wages were higher in the West-Riding at this period than in the Norwich district, as witness Mr. Sutcliffe's information compared with Arthur Young's account of Norwich, and also upon comparison of the latter

with his statement of wages earned at Leeds about this date, printed in a subsequent page.

Upon examination of the West-Riding computation, it is seen that shalloons continued, as they were the first worsteds made here, to be the principal item of the stuff business; next double stuffs, ranked in value; then calimancoes and russells. The tammy business was likewise one of considerable extent. There is a fact pregnant with meaning,—notwithstanding, the manufacture on the whole, amounted to nearly one million and a-half, hardly £300,000 worth of it obtained a market at home, the rest being shipped abroad. This fact, coupled with the immense exports from Norwich, clearly enough proves that our stuffs in a very large proportion were exported, and were not generally worn in the kingdom, whilst one-third of the cloths and other fabrics of short wool, made in the West-Riding, was consumed at home; but even in that department of industry, the remaining two-thirds found vent abroad. Of Yorkshire stuffs only twenty per cent. seems to have been used in England. For Norwich, London, and other southern made stuffs, the market to a considerable extent was at home.

These statements enable one to form some conclusions as to the general condition and extent of the worsted trade, and the amount of exports therein. The total official value of English woollen and worsted exports of every description, in the year 1772, reaches only to the sum of £4,333,583; so (allowing that the official value is less than the real one) it is evident, the Yorkshire clothing exported actually amounted to about one-half of that sent from all parts of the kingdom. The value of the Yorkshire worsteds exported nearly approached that of cloth, though Yorkshire was peculiarly the seat of the manufacture of cloth for export.

Of the total exports of fabrics of wool, we may gather from the Table in the Appendix, who were the largest purchasers. In 1772, America took of these to the value of £1,000,000, showing that on the rupture with her we estranged our best customer. Spain, after America, took the most, namely, to the value of £550,000. Next Portugal £500,000, but there,



through the adverse endeavours of the Portuguese government, our exports had to a large amount declined. Italy received to the amount of £450,000. Holland took to the value of £400,000. Germany £250,000. Flanders £200,000. Ireland, in her impoverished condition, imported from us in wool fabrics to about £170,000. The East-Indies to £230,000. Our West-India possessions to about £100,000. Africa 167,000. Turkey £60,000. Russia £50,000.\*

Whilst avoiding the expression of any opinion on the correctness of the computations, made from time to time during this century, respecting the value of our manufactures from wool, it will be proper to put the reader in possession, occasionally, of some of those computations most entitled to credit. Dr. Campbell, a writer of some authority, in his Political Survey of Great Britain, published during the year 1774, after treating upon the importance of our wool produce, observes:—(vol. 2, page 158,) “Many computations have “been made upon this important subject, and amongst others, “one about thirty years since, which at that time was thought “to be pretty near the truth.† According to the best infor- “mation that can be obtained, there may be from 10,000,000 to “12,000,000 sheep in England some think. The value of “their wool may, one year with another, amount to “£3,000,000; the expense of manufacturing this may

\* Coxe, in his Travels, makes it much more than this, for he mentions, that in 1777, there were imported into St. Petersburg, in *British ships*:—

	£
206,816 arshines of bays, valued at.. .. .	20,956
100,494 „ calimancoes and camblets .. .. .	7,034
32,412 „ camblets .. .. .	6,880
365,896 „ shalloons .. .. .	24,881
mohair .. .. .	45

Besides 162,007 arshines of fine cloth and ordinary cloth of the value of £55,642. But, Brough, in his ‘View of the importance of the Trade between Great Britain and Russia,’ printed in 1789, states, that the Russians bought of us annually 500,000 arshines of bays, calimancoes, and white cottons. This would indicate that in the interval between 1777 and 1789 there had been a falling off in the trade in stuffs to Russia, unless Coxe’s statement implies, that all that were sent in British ships were not our produce. An arshine is a Russian measure of twenty-eight inches.

† Does this mean the estimate in the ‘Short Essay?’ See page 234, *ante*.

“probably be £9,000,000; and the total value £12,000,000.  
“We may export annually to the value of £3,000,000, though  
“one year we exported more than £4,000,000. In reference to  
“the number of persons who are maintained by this manufac-  
“ture, they are probably upwards of 1,000,000. Sanguine  
“men will judge these computations too low, and few will  
“believe them too high.”

To resume the subject started, namely the attempt to impose increasing duties on foreign linens: Mr. Wolrich entered into a correspondence with well-informed persons on the Continent, to ascertain what manufactures from wool Germany could supply herself with in case she excluded ours. The following, with respect to worsted goods, was the result of these inquiries.

Eisenach was very famous for its serges and shalloons, which had a great sale all over Germany, Switzerland, and Italy, where were sold also many of the fabrics of Gera. The large quantities of these serges sold, occasioned a decrease in the demand for English shalloons. The shalloons of Eisenach were not so good as the English ones, not having substance enough, but were very cheap, and had improved greatly.

Gottingen had a manufacture of camblets, which, it is stated, were very good.

Berlin.—Here were made all kinds of stuffs which were good and cheap. Their serges de Rome were, it is stated, better than the English.

At Gera, in Saxony, they made very good serges de Rome, and serges de Nismes, everlastings, amiens of mohair and wool, plushes, baragans, striped and plain camblets, &c.

At Hanau, camblets of wool.

At Hesse, serges.

Lille, in Flanders, furnished different sorts of camblets and calimancoes, for the German market.

So strong was the case made out before the Committee of the House of Commons on behalf of the manufacturers from wool, that no further proceedings were taken with reference to increasing the rates on the importation of foreign linens, foreseeing that in case we loaded these with further imposts, it would react abroad to the exclusion, in a large degree, of our own textile exports.

Supplementary to the preceding accurate Survey of the West-Riding Stuff Manufacture, the following memoranda respecting its principal seats will be acceptable to the reader; first premising, that the main portion of the stuff merchants in Yorkshire during this age, resided, or had their places of business, at Leeds, Halifax, and some at Wakefield, and contrary to the practice which prevailed some years earlier, when a considerable portion of these stuffs were consigned to London to be dyed and finished, as the art then existed only in a very primitive state in the north, they now underwent these processes in the country.

Bradford, even in these times, constituted a chief seat of the manufacture in the north. Its Piece Hall, one of the first in the county, reared its head so early as the year 1773, being erected by the subscription of the gentlemen, merchants, woolstaplers, manufacturers, and others, in the town and neighbourhood.\* All ranks hastened to promote its erection, as a substantial benefit to the trade and welfare of the inhabitants. The principal goods made in the town and surrounding neighbourhood were calimancoes and some tammies. It is related, that previous to the erection of the Piece Hall, at Bradford, the stuff makers of the surrounding district had closets in a large room, near the White Lion Inn, Kirkgate, where they exposed their pieces for sale on the market day, and locked them up until the next week. Those manufacturers who resided in Bradford, had, in or near their houses, piece rooms. Bradford-dale was then crowded with hand-loom weavers and spinners. A venerable authority relates to me that the women and children of Allerton, Thornton, Wilsden, and the other villages in the valley, flocked on sunny days with their spinning wheels to some favorite, pleasant spot, to pursue the labours of the day. He states that these 'spinners in the sun' were, at their gatherings, not free from the vice imputed to their daughters at the modern tea table. The average earnings of spinners at this period did not exceed sixpence a day, but the labour was light and cheerful.

\* James' History of Bradford, page 271.



Having access to the account books of a worsted manufacturer of the West-Riding, from the year 1754 to 1778, the ensuing particulars, exhibiting the value of combed wool, and of yarn, are extracted therefrom.

PRICES OF WOOL TOPS IN THE FOLLOWING YEARS.

	1766		1767		1768		1769		1770		1771	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Thirty-sixes	1	8	1	8	1	6	1	6	1	6	1	6
Thirties ..	1	4½	1	4½	1	4	1	3	1	3	1	3
Twenty-fours	1	2	1	2	1	1	1	0	1	0	1	0
Sixteens ..	0	10	0	10	0	9	0	9	0	9	0	9

Yarn was, in all these years, upon an average of sorts, fourteen shillings and threepence per gross, except in 1769, when it reached fourteen shillings and sixpence. Calimanco pieces, he valued at twenty-four shillings a piece. The mode of payment in his case was, in a great measure, in bills of exchange, drawn at so short a date as six weeks.

Pennant, on his return from his 'Tour in Scotland,' passing through Halifax, relates that shalloons and everlastings, together with says of a blue colour for Guinea, were manufactured there. The last, he observes, were packed in pieces of twelve yards and a half, wrapped in an oil cloth, painted with negroes and elephants, in order to captivate the natives.\* About the year 1779, it would appear that the worsted business had, in particular, reached a high point at Halifax, because in that year a spacious Piece Hall, termed 'The Manufacturers' Hall,' was opened there. The population of Halifax had greatly increased from the growth of manufactures during the last forty years.†

At Leeds also, as related by Arthur Young in his 'Six Months' Tour through the North of England,' many stuffs were woven. These are his words, which also establish the

\* Pennant's 'Tour in Scotland,' Fourth Edition, London, 1776, vol. 3, page 362. The Preface is dated October, 1770. He passed through Keighley and Halifax on his way from Scotland.

† Crabtree's History of Halifax, page 357.

fact that the wages obtained there ranged higher than those of the Norwich workpeople—"Besides broad cloths, there are some shalloons, and many stuffs made at Leeds, particularly Scotch camblets, grograms, burdies, some calimancoes, &c. The weavers earn from five to twelve shillings a week, upon an average seven shillings; boys of thirteen or fourteen, five shillings a week, but they are all thrown out in bad weather; men in general at an average the year round, about six shillings, or six shillings and sixpence per week. They never want work at weaving. Dressers earn from one to three shillings a day, but are much thrown out by want of work. The women by weaving stuffs earn three shillings and sixpence, or four shillings a week. Woolcombers six to twelve shillings a week. The spinning trade is constant; women earn two shillings and sixpence, or three shillings a week; girls of thirteen or fourteen, earn one shilling and eightpence a week; a boy of eight or nine at ditto, twopence halfpenny a day."\* Previous to the year 1780, the making of camblets constituted a large portion of the Leeds manufacture. They were dyed in the yarn, plain colours, and mixed or shots, and formed the general wear of the lower classes of females. Large quantities of these camblets were also shipped to the North of Europe.

Wakefield was a thriving town, making camblets and tam-mies. From the year 1698, the Calder had been navigable, and by this course came a large portion of the long wool of Lincolnshire and Leicestershire. Indeed, wool growers and dealers in all parts of England forwarded wool to their factors at Wakefield, who disposed of it among the manufacturers of the adjacent district. Hence Wakefield on market days exhibited a very busy scene—How thronged the old inhabitants remember to have seen it!—What numbers of purchasers frequented its precincts! The Tammy Hall was erected about 1766.

Keighley is mentioned by Pennant, in his Tour, as possessing "a considerable manufacture of figured everlasting, in imitation of *French silks*, and of shalloons and

\* Arthur Young's Six Months' Tour through the North of England, vol. 1, page 138.

calimancoes.”\* The stuff makers of Keighley (and also those of Haworth) principally exposed their goods for sale in Halifax Piece Hall.

Huddersfield was also engaged in the making of serges.

At this date, besides cloths, there were made in considerable numbers on the borders of Lancashire, shalloons, calimancoes, serges, and tammies. As the centre of this district, a Piece Hall at Colne, on the principle of the Bradford Hall, formed the great mart of the district for a long period. It was erected in the year 1775, by a company of proprietors.† Here, in these days, the numerous master worsted weavers resorted from the surrounding villages and hamlets, and presented a picturesque and busy scene. Colne serges constituted, as before noticed, a large item in the trade of the district.

Many serge makers resided in Wharfedale and Airedale, who attended Colne market with their pieces. A descendant of one of these makers who lived at Askwith, near Otley, states that his ancestor put out wool to spin in Cheshire, and the adjoining dales of Derbyshire. Here is an example of the difficulty in pursuing with success the manufacture in those days. The wool had to be brought from a distance, for instance York or Wakefield, on pack horses, along the worst of roads; and after being combed at Askwith, conveyed in like manner to Cheshire to be spun, when, on being returned in yarn, and woven, the pieces had to be carried to so far a market as Colne.

With the growth of the manufacture in Yorkshire, frauds by the workpeople increased to such an extent, and were committed with so much impunity, that it became imperative

\* Pennant's 'Tour in Scotland,' vol. 3, page 311. He mentions also that the inhabitants of Keighley were much employed in spinning for the stocking weavers.

† Baines' History of Lancashire, vol. 3, page 242. The Hall, which is a substantial stone building situated on the south side of the town, was erected upon a piece of ground given for the purpose. It consists of two spacious rooms fifty-four yards long by fourteen broad. When I visited it last year, (1854) it had a desolate appearance, having, since the decline of the worsted trade in this district, and the resort of the manufacturers to Bradford market, been used only at the annual fairs for the sale of general merchandise.



to take, without delay, measures for effectually preventing them. The woolcombers embezzled their employers' wool; the spinners reeled false or short yarn; and in case a master, bolder or more energetic than his neighbours, put in force the law, which was in many respects very defective, such a combination existed among the operatives that he could not obtain hands, because they refused to work for him, and frequently plotted mischief against his person and property. Thus, few manufacturers had the resolution to enforce the penalties against embezzlement and false reeling, and the evil increased so alarmingly as to threaten the prosperity of the whole trade. It has before been remarked, that in the reign of George II., two legislative measures were obtained to punish embezzlers and false reelers; and since the accession of George III. to the throne, two others had, in addition, been procured;\* but all these, chiefly for want of a proper prosecuting power, remained almost inoperative. After many meetings, conferences, and deliberations, the stuff manufacturers of the West-Riding of Yorkshire, joined by those of Lancashire and Cheshire, arrived at the conclusion, that no other remedy remained than to apply to Parliament to constitute a Committee, or body of persons, for the purpose of watching over the interests of the trade, and bringing to punishment delinquents. A strong case was presented to the

\* Before the promulgation of the law, (17 Geo. III., chap. 11,) two Acts of Parliament had received the royal assent in this reign, to prevent frauds in the woollen manufacture. The first of these, (14 Geo. III., chap. 44,) recites, that it had been found, by experience, that the punishments (imprisonment) directed to be inflicted by the Act 22 Geo. II., chap. 27, were too severe, on which account offenders went frequently unpunished, and many industrious honest persons were deterred from spinning; that Act was therefore repealed, so far as punishment for short or false reeling, and instead it was enacted, that offenders should forfeit and pay for the first offence a sum not exceeding twenty shillings, nor less than five shillings; and for the second offence any sum not exceeding five pounds; and for the third, imprisonment for one month with hard labour, and to be publicly whipped. Power is given to the person convicted to appeal to the Quarter Sessions. The next of these Acts, (15 Geo. III., chap. 14,) is merely for the purpose of remedying an omission in the former one, in which there was no compulsory power to obtain payment of the penalties. This last Act declared, that the penalty should be levied by distress upon the goods of the offender, and where no goods could be found, the offender to be committed for one month.

Legislature, exhibiting the extent and value of the manufacture; the injury caused by the frauds of the workpeople, obstructing its growth and prosperity; the difficulty with which offences were detected and convictions obtained; the combinations of the offenders, and outrages committed against those who prosecuted them. And to meet this anomalous case, extraordinary, but just powers, were granted in two Acts of Parliament passed in the year 1777, commonly called the 'Worsted Acts.'\* From this date a new era opened upon the manufacturer. Soon the business assumed a more orderly and secure character; the heavy losses of the employers occasioned by the dishonesty of their operatives began to disappear; the offences of embezzlement and false reeling diminished, and henceforward the masters' profits were no longer liable to incessant drains from these sources of fraud. Unquestionably the important benefits which have accrued from the provisions of these two Acts, have mainly arisen from their judicious working by the Committee chosen from time to time thereunder. Being gentlemen of the highest and most respectable class in the manufacture, extensively engaged therein, intimately acquainted with all its bearings, and having its interests at heart, they had every inducement to carry into full effect, but with moderation, the law. To this Committee, the worsted manufacturers are under weighty obligations; and in this tribute must be joined the clerks, in particular the late Samuel Hailstone, Esq., who for a long period zealously administered the duties of Committee clerk with vigour and watchfulness, without partiality or undue severity. By these means, for many years past, embezzlement of wool has become infrequent, and the evil-doer been deterred by the fear of almost certain detection.

Much has been urged against the last of these Acts of Parliament, which, in one particular clause, it has been alleged, reversed the laws of England, which deem every man innocent of offence until it be proved against him; whereas, that clause rendered it imperative he should shew

\* 17 Geo. III., chap. 11, and 17 Geo. III., chap. 16.



himself not guilty, and threw the onus of proof upon him. To this observation the reply is obvious. If the ordinary course of trial were followed, the culprit could, in most cases, escape with impunity, as happened in former times, for in the whole list of offences there is not one more difficult to obtain a conviction, by direct evidence, than in the embezzlement of wool by the comber. The embezzler is enabled in secret, and with few chances of detection, to commit the fraud; the material is abstracted in such small quantities at a time as not to be easily missed, besides rendering the aggregate or parcel of wool altogether at various times abstracted not easily identified. Above all, the offender would by evasions, calling witnesses in his favour—accomplices and easily persuaded people, have readily eluded justice, if any other remedy had been adopted. So it is evident that without changing, in this instance, the usual mode of proof and trial, no adequate powers to repress the offence could have been gained. To guard against any injustice which might be attributable to the tribunal, and to give the innocent every chance of escape, the person charged had, by way of appeal to a full bench of justices at quarter sessions, a full opportunity of shewing the facts, and clearing himself. Added to this, so prudently and without vindictiveness have the Committee, through its clerk, conducted the prosecutions, in which alone the punishment of offenders was aimed at, that it would be a rare instance to find that the true intention of the statute had been exceeded. But the old incorrigible embezzler was pursued through all the mazes of his fraudulent and often cunningly contrived schemes with the utmost pertinacity, and eventually convicted,—receiving his deserts, an example to others of his class.

So important are the bearings which the ‘Worsted Acts’ have had, and still have, upon the manufacture, that a full summary of their contents will be found in the Appendix. Their most essential features, as to the working power for giving them effect, consist of clauses authorising the appointment, at a general meeting of the manufacturers of combing wool, worsted yarn, and goods made from worsted, in the



counties of York, Lancaster, and Chester, of a Committee of twenty-seven persons: the Yorkshire manufacturers to elect eighteen persons from among themselves, and the remaining nine to be chosen by the Lancashire and Cheshire manufacturers. This joint Committee to nominate inspectors for the purpose of detecting and prosecuting delinquents. A fund, for effecting the purposes of these acts, was provided out of the drawback on soap employed in the manufactures from wool. (*See Appendix.*)

Without delay the necessary steps for putting in force these Acts were taken. A general meeting of the manufacturers of combing wool, worsted yarn, and goods made from worsted, was held at the Talbot Inn, Halifax, 9th June, 1777, for appointing a Committee as before directed.

The manufacturers then present, acting for themselves and proxies, appointed Mr. John Hustler their chairman, under whose influence chiefly the Act had been obtained.

In order to make the Committee more generally useful it was resolved that the members should be chosen out of different districts, thus:—

Halifax, and the several Yorkshire manufacturers who usually attended that market .. ..	} 6
Bradford, and the like .. ..	4
Leeds, and its neighbourhood .. ..	2
Wakefield, &c. .. ..	2
Huddersfield, &c. .. ..	1
Keighley, &c. .. ..	1
Skipton and Craven, &c. .. ..	1
Ripon and that part of the North .. ..	1
	<hr/> 18 <hr/>

These figures may be assumed to represent the relative number of worsted manufacturers in each district. The large *parish* of Halifax furnishing the most; next Bradford whose proportion is set down as at four; then Leeds and Wakefield; afterwards, Keighley and Skipton. Ripon and the north were merely engaged in spinning yarn.

The following persons constituted the Yorkshire portion of the first Committee.—

HALIFAX.	SKIPTON AND CRAVEN.
Mr. Adam Holden.	Mr. William Alcock.
Mr. Robert Swaine.	
Mr. William Curren.	LEEDS.
Mr. Jeremiah Carter, Jun.	Mr. William Benson.
Mr. John Fielden.	Mr. Charles Clapham.
Mr. John Knowles.	
	WAKEFIELD.
BRADFORD.	Mr. John Broadhead.
Mr. Thomas Hardcastle.	Mr. Michael Wortley.
Mr. George Kellit	
Mr. James Garnett.	HUDDERSFIELD.
Mr. Tommis Atkinson.	Mr. Edward Houghton.
KEIGHLEY.	RIPON.
Mr. Samuel Blakey.	Mr. Richard Brown.

The apportionment of the Committee for the counties of Lancaster and Chester stood thus:—

Manchester and Cheshire	..	..	..	..	3
Rochdale, and its neighbourhood		..	..		2
Rossendale, and the like	..	..	..	..	1
Colne, and its neighbourhood	..	..	..	..	2
Burnley, and the like	..	..	..	..	1
					<hr/> 9

And the following persons formed the first Committee for those districts:—

MANCHESTER AND CHESHIRE.	ROSSENDALE.
Mr. Thomas Falkner Phillips.	Mr. Richard Lord, of Grave.
Mr. Thomas Cheshire.	BURNLEY.
Mr. Benjamin Brierley.	Mr. James Roberts.
	ROCHDALE.
COLNE.	Mr. Lawrence Newall.
Mr. Henry Ecroyd.	Mr. James Haslam.*
Mr. Lawrence Leigh.	

\* These particulars are extracted from the 'Order Book,' of the Committee under this date.

Another meeting being convened at the Talbot, in Halifax, on the 23rd June, 1777, the Committee resolved, that seven inspectors should be appointed with £50 a year salary, each to pay his own expenses, and to devote his whole time to the purposes of the Committee.

The following Inspectors' districts were apportioned:—

*Yorkshire—South District.* From Blackstone Edge, the nearest way to Huddersfield, thence to Wakefield along the River Calder, till it joins the River Aire, and from thence to the Humber, including all that part of Yorkshire which is south of that line.

*Middle District.* From Ferrybridge to Tadcaster, from thence along the River Wharfe to Otley, through Silsden and Cross Hills towards Colne, till the road joins Lancashire, and on the edge of Lancashire till it joins that part of Blackstone Edge where the South District begins.

*West District.* From that part of the River Wharfe nearest Wetherby to Ripley, Middleham, West Witton, Aisgarth, Askrigg, Hardrow Chapel, Thwaite Bridge, to Hell Gill Beck, thence down the borders of Westmoreland and Lancashire until it joins the road from Cross Hills to Colne.

*North District.* From Wetherby, by Tadcaster to Ferrybridge, thence towards the sea on the north side of the Rivers Aire and Humber, round by the sea until it joins the Bishoprick of Durham, thence by the edge of that county and Westmoreland to Hell Gill Beck.

*Lancashire and Cheshire—North District.* Taking the road from Preston westward to the sea, and from Preston keeping the high road to Todmorden, including all the towns and villages on this road, and all north of the same.

*South District.* All Lancashire south of the above district, and that part of Cheshire where spinning is done.\*

The Committee and the inspectors encountered great difficulty in putting in force the worsted acts. Justices of the Peace, especially in agricultural districts, until compelled by mandamus refused to entertain charges against, or convict upon proper evidence, embezzlers or false reelers; the inspectors at first were negligent or incapable; the collectors of excise failed to furnish accounts, or pay over the amount of drawback on soap. By perseverance and good management, all these obstacles were surmounted, and eventually, the whole machinery of the Committee and its officers, worked effectively and well.

Nor have the efforts of the Committee been restricted to the repression of frauds in the trade. It has prominently

\* Order Book of the Committee.



assisted in numerous measures for the general benefit of the stuff manufacture, and expended large sums with that intention. In all steps undertaken to prevent the exportation of our wool and yarn, it took a part, and prosecuted parties who, contrary to law, exported these articles. Also in giving rewards to inventors: for example, in 1785, to James Hartley of Gisburn, one hundred guineas, as a gratuity, for his invention in washing wool; in preventing the exportation of machinery used in the trade; and in opposing attempts of the Legislature to put down the use of machinery in combing.\* These may be adduced among very numerous instances of the readiness with which the Committee, in person or *money*, lent its aid in promoting the general welfare of the worsted business.†

Though it has been seen that the worsted manufacturers and the wool growers of Lincolnshire cordially agreed whilst opposing the imposition of extra duties upon foreign linen, the period now approached when this concord should be dissolved. A long and arduous contest commenced between them, which did not terminate until the year 1824. Many causes had conspired to reduce the price of long wool, independent of those arising from the depression of trade, consequent on the war. Large tracts of common and waste had recently been inclosed. The breeding of sheep, to produce heavy fleeces, had been made an object of great attention; besides the improved feed with turnips tended to augment the weight of the fleece. Consequently the number of sheep had vastly increased, as well as the relative quantity of wool, and especially the proportion of long wool to short had become much greater than formerly. Counties, which until recently only grew clothing wool, now abounded in long or combing wool. While the market at home was thus overstocked, the wool

\* Extracted from the Order Book of the Worsted Committee.

† Soon after obtaining the Acts of Parliament by the Worsted Committee, the manufacturers of the counties of Bedford, Huntingdon, Northampton, Leicester, Rutland, Lincoln, and the Isle of Ely, obtained an Act of Parliament to prevent frauds by their workpeople. A Committee of fifteen, chosen at a general meeting of the manufacturers of those counties, was appointed to carry the Act into operation; and for that purpose, to appoint inspectors, &c.

growers of Lincolnshire, knowing that they could obtain much higher prices for their wool if the law permitted the same to be exported, began, in the year 1780, a widely ramified agitation to obtain the repeal of the enactments which prevented it, and which they alleged, occasioned their wool to remain unsaleable in the home market. These proceedings were met with alacrity by the worsted manufacturers of Yorkshire, and Norfolk, who deemed the very existence of their trade in jeopardy, should the exportation of the long wool of Lincolnshire, and other districts of rich soil and fens, be permitted. The manufacture depended upon that long wool, which, on account of the length and the strength of the staple, was alone adapted for it, forming a smooth, level, even yarn, little liable to shrink, curl, or felt in weaving, and finishing the stuffs. Accordingly meetings were held at Bradford, Halifax, Norwich, Exeter, and other places, at which it was unanimously resolved that the objects of the wool growers should be strenuously opposed. No adequate conception can be formed of the commotion which this movement caused among the manufacturers of the kingdom. The county of York, in a prominent manner, took part in the contention. At the Lent Assizes, held at York, the High Sheriff and Grand Jury unanimously resolved "that to permit the exportation of wool would be highly detrimental and injurious to this country, and tend to promote the interests of our rivals and enemies, in opposition to the most valuable commerce of our fellow subjects, and that it becomes the inhabitants of this county, and all other manufacturing places by every legal method, to oppose any application to Parliament for a purpose so alarming and injurious." Numerous meetings of the manufacturers from wool were held in Leeds, Bradford, Halifax, and other towns of the West-Riding, at which it was declared that the exportation of wool would be ruinous to trade and manufactures. Other towns of the kingdom followed this example, and a general meeting of the merchants, woollen and worsted manufactures, was held in London, January, 1782, at which it was resolved to oppose the attempt of the Lincolnshire wool growers. The latter were not idle in their



endeavours to attain the object they had in view. Meetings were held and petitions presented to Parliament, in which it was alleged, that after a certain period subsequent to the clipping, the long and coarse wools which could not be sold at home, ought, in justice, to be allowed sale in the foreign market. But the voice of the kingdom was unequivocally expressed against the proposition, and the Legislature refused to alter the law.

Very many eminent writers enlisted on the side of those who desired the exportation of wool. Among these, stands conspicuous, Dean Tucker, who by his powerful pen gave much weight to his arguments. He attributed the low price of wool to the stoppage by the war of the usual exportation of woollens and worsteds abroad; the diminution of cottages; the increase in the production of wool by breaking up of waste land, and the disuse by the middling and lower classes of the coarser kinds of woollens and worsteds for wear. His remedies were to permit the exportation of long wool under a small duty, and that a bounty of three half-pence in the pound should be granted on the exportation of our coarser cloths and stuffs to ports in the Baltic. A pamphlet was also published in favor of the exportation of wool by Sir John Dalrymple. But in one of these fugitive pieces, there is contained some particulars worthy of extract. The writer maintains as an argument for allowing the exportation of our wool, that, except in our finest stuffs, the quality of the wool was immaterial, and that most of our excellence, as stuff makers, arose from good workmanship. He says, “camblets which are made at Brussels, and those the French use for summer clothing, are intrinsically good in quality, but they have not so *nice a finishing* as those of British make. The excellence of our fine stuffs arises from fine wools and our good workmen, but of our coarse ones solely from our artificers,” and instances a Norwich merchant who seeing in Germany some Saxony made, mistook them for Norwich stuffs, and declared they were very good calimancoes, but that the manufacturer had sent them off half-dressed. He adds, “the manufacturers at Norwich, in Yorkshire, Leicestershire, Northamptonshire, consume the wools of the growth of Lincolnshire in the



making of single and double warp calimancoes, camblets, tammies, damasks, and other articles, and that in those kinds which are to be scoured, glossed, or hard pressed, or more properly in all the kinds any of them make, (fine camblets only excepted) the quality and grain of the wool which forms the thread or yarn, (as they term it) is never attended to as a matter of the least consequence. Their whole attention is paid to the spinning of the yarn, which should be even, and not too hard spun, so as to leave the thread of a tolerable soft consistency that the interstices in the piece when wove may be filled up by the dressing, which presses and gently fills the threads together, giving the stuff the appearance of a close and good texture.”\*

Another consequence of the stagnation in manufactures from wool, evinced itself in the sluggishness of our demand for Irish wool and yarn. Hence the Irish were induced, for want of a sufficient market in England, to prosecute with great energy the working up of their fleeces into woollen and worsted fabrics. Besides the want of vent for Irish wool here, other causes concurred to foster the Irish manufactures, arising from the improvement of the condition of the people, the encouragement of enterprise, and the large increase of population. Ireland, like, a younger sister, had been treated with injustice by the elder, England, who had in the harshest manner imposed upon her trade and commerce most iniquitous restrictions, but she now began to assert her rights. As evidence of the vast falling off in the importation of Irish wool and yarn to England and the increase of manufactures in the sister isle, these facts may be adduced:—On an average of five years, ending 1768, Ireland annually exported to England—

	lbs.
Wool .. .. .	455,132
Yarn .. .. .	2,885,132

This vast importation of Irish yarn arose, in a great measure, from the lowness of wages in Ireland, being in spinning

\* An Inquiry into the Nature and Qualities of English Wool, by a Gentleman Farmer, 1782.

in the proportion of twopence half-penny to threepence, and fivepence to sixpence in England.

But on an average of five years, ending 1783, the export of wool and yarn only amounted to—

	lbs.
Wool .. .. .	35,830
Yarn .. .. .	1,516,590

The growth of Irish woollen and worsted manufactures cannot better be exemplified than by the following table, shewing the decrease of importations into Ireland from England:—

OLD DRAPERY OR WOOLLEN GOODS.			NEW DRAPERY OR WORSTED.	
YEAR.	YARDS.	VALUE.	YARDS.	VALUE.
1777	381,330	£266,931	731,819	£91,477
1779	176,196		270,839	
1780	64,346		159,428	
1781	326,578		433,198	
1782	362,824		547,336	
1783	371,871		420,415*	

When the war with America ceased, in 1782, this restriction in the quantity of Irish wool and yarn formerly at the command of the English manufacturer, coupled with the extensive smuggling abroad of our own wool, soon began to be felt by the worsted-maker in the scarcity and high price of the materials. Though the demand for English stuffs in America, which all the efforts of Congress could not repress, had been, to a considerable extent, supplied in many contraband ways, principally through the ships of neutral

\* “Observations on the Manufactures, Trade, and Present State of Ireland,” by John, Lord Sheffield, 1785. The following extract respecting the price of wool in Ireland during this century, is worthy of attention. “The quality and nature of the wool of Ireland has undergone great changes. Sir William Petty mentions the fleece to have weighed two pounds, and he estimated the number of sheep at 4,000,000. Arthur Young states the average of the fleece in his time to have been five pounds.” The price of wool in Ireland from 1703 to 1729, averages six shillings and sixpence per stone of sixteen pounds; *fine* wool in Ireland, in 1743, sold at sixteen shillings per stone, the medium was twelve shillings. The medium price of fleece wool in Ireland was, from 1770 to 1774, from fourteen to sixteen shillings per stone of sixteen pounds; from 1774 to 1777, sixteen to eighteen shillings and sixpence per stone, but in 1778 it fell to about eleven shillings per stone.

nations and our West-India islands, yet, on the proclamation of peace, the industry of the nation, not merely in worsteds, but in every other department, began to shoot anew and acquire fresh vigour. Hence, in the ensuing years, the demand for wool increased, and prices improved, so as to remove the just grounds of complaint by the wool growers. The interval between the close of the American War and the commencement of the French Revolutionary War, (1792,) undoubtedly formed one of the most flourishing periods in the worsted trade in Yorkshire; for notwithstanding the immense augmentation in the making of cotton textures, and their comparative cheapness, occasioning the substitution of them, in a great degree, for articles of stuff, so much had the demand for the latter grown, in order to supply hangings and other requisites of furniture, as well as the enlarged consumption of worsted yarn in the weaving of carpets, that the trade continued on the whole, during that interval, in a prosperous condition. In this state of circumstances the eyes of the manufacturers were speedily directed to the extensive smuggling of our wool abroad, where temptations of excessive price presented themselves. Our long wool, being that mostly coveted by the foreigners, had become scarce and dear, and the manufacturers, suffering much from these causes, determined to appeal to the Legislature for effectual protection, in the shape of a more stringent law against the illegal exporters of wool. The Lincolnshire and other long-wool growers took the alarm, construing this step to deprive them of the foreign market, as one leading to a heavy depreciation in the price of the commodity, and accordingly formed an extensive and powerful combination, to resist the imposition of a more rigorous law on the subject. On the other hand, the manufacturers of wool, especially those of long wool, throughout England, organized a body of influential gentlemen to proceed to London for the purpose of carrying into effect their objects. The Worsted Committee deputed Mr. Charles Clapham, of Leeds, and Mr. John Hustler, of Bradford, to give evidence, along with others, before Parliament. Mr. Hustler, (who was engaged in the wool business sixty years, and had there-



fore a large experience) made, with the assistance of other wool dealers, calculations, from which he estimated the produce of English wool at 600,000 packs, or 144,000,000 pounds weight; it was also alleged, on the part of the promoters of the Bill before Parliament, that 11,000 packs were annually smuggled out of the kingdom. In answer to this allegation, the agricultural interest produced many witnesses to state that the estimated amount of our wool sent abroad was vastly exaggerated. Sir Joseph Banks and Arthur Young exhibited extracts from the French Customs' Register, to shew that the average annual exportation of English wool to France only amounted to about 1,000 packs. Whether the manufacturers' estimate of our loss by illicit carrying of wool be much too high or not, it cannot be admitted that the French Register could be any accurate index of the quantity taken to France, much less abroad. A clear case being made out against the exportation of English wool, and the party of the manufacturing interest mustering strong in the House of Commons, a most stringent law was obtained, subjecting to heavy punishments all persons concerned, directly or indirectly, in exporting wool.\* As a sign of the importance attached to the prevention of our wool being carried abroad, when the news arrived that the Bill had passed the House of Lords, the bells in Leeds, Bradford, Halifax, Wakefield, &c., rung a merry peal during the whole day, and at night there were bonfires and other demonstrations of joy. Having been the chief promoters of the measure, the Worsted Committee were most active in detecting, and bringing to trial, offenders against it. Rewards were offered, detective officers employed. Among the first persons punished under this new law, were Mr. Hainsworth and his son, merchants, Leeds,

\* Any person concerned directly or indirectly in exporting wool, was by this Act (28 Geo. III., chap. 38,) rendered liable to a penalty of £3 for every pound exported, or £50 in the whole, whichever the prosecutor should prefer, and also to solitary imprisonment for three months for the first offence, and six months for the second, and in addition forfeiture of the ship, boats, carriages, &c., employed in smuggling wool. Many regulations are imposed upon the conveyance of wool from one part of the kingdom to another. Altogether the Act was of the most stringent character.

who at the Westmoreland assizes, in 1789, were convicted of shipping worsted yarn to Spain.\*

The cessation of the war with America, and the consequent enlargement of the commerce in stuff pieces, caused the supply of yarn for the Yorkshire weaver, to be scant. Formerly, as often previously adverted to, Yorkshire, and other parts of the north of England, furnished large quantities of yarn for the weavers of Norwich. But some decay of trade in that city, and a considerable increase of population in the latter portion of the century, occasioned a surplus of spinners in the locality. While this was the condition of the manufacture in Norfolk, the trade of the West-Riding waxed greatly, and increased in stature. The piece maker, using every exertion, could not obtain from the home district, or Craven, Wensleydale, and the northern valleys of Yorkshire, a sufficient supply of yarn: and exactly the reverse of what took place in the early part of the century ensued. Yarn was sent to the Yorkshire stuff markets, the produce of Norfolk, Suffolk, and Essex.

From the year 1782 to 1792, the demand in foreign markets for English worsted goods, far exceeded that of any former period, and in this trade, the West-Riding, especially Halifax, took a large share. The writer of a pamphlet entitled the *British Merchant*, published in 1787, asserts that the articles of export to Spain and Portugal mostly consisted of worsteds: he observes, that the French and Dutch had almost a monopoly in the cloth trade to those countries, but that we sent them bays, long ells, duroys, and camblets, and with these alone, according to this writer, we supported the profitable commerce with Spain and Portugal, where the balance of trade in our favour was often upwards of £400,000

\* "There came to be tried at Appleby before the Right Honourable Sir Alexander Thomson, one of the Barons of the Exchequer, an issue from the Court of King's Bench, to try Messrs. Hainsworth and Son, of Leeds, merchants, on an information lodged against them for exporting worsted yarn to Bilboa, in Spain; when, after a hearing of more than four hours, in which many ingenious arguments were urged by the Counsel on both sides, the Jury unanimously found the defendants, Thomas Hainsworth and Son, guilty, both of illegal package and the exportation thereof."—*Gentleman's Magazine for Sept. 1789*, p. 855.

a year each. Notwithstanding, the West-Riding enjoyed indisputedly the largest portion of the prosperity which now prevailed in the worsted business, and as before noticed, there had been some decline at Norwich, yet even in the interval between the close of the American and commencement of the French war, the trade of the city was very considerable. Taking the words of Mr. Blakeley relative to this period, he observes, “camblets, camletees, calimancoes, satins, bombazines, and lastings, were the articles most in demand, and the ledger of one firm during the year 1791 shows exports in the above to Italy, Spain, Spanish America, Germany, Russia, Norway, Holland, Madeira, and China, to the amount of £100,000 sterling, whilst thirty other manufacturing firms were competitors in the same fabrics.\* This was at a period when the total exports of the manufactures of England were £14,000,000, out of which Norwich furnished its quota of £1,000,000.” Worsted camblets found a ready sale amongst the inhabitants of the Chinese Empire, Russia, Germany, Holland, and Spain.

There is, from the pen of John Taylor, of Norwich, so well known in the literary world, and for the interest he took in the prosperity of his native city, an excellent article on its manufactures, printed in the *Old Monthly Magazine*, for 1798.†—To mutilate or curtail the records of such men as Arthur Young or John Taylor on the Norwich staple trade, would be to deprive them of much of their value. From the narratives of such eye witnesses we can alone form any accurate and safe conclusions as to the state of the manufacture. No conception can be formed of the labour and difficulty that

\* In Parsons' *History of Leeds, &c.*, vol. 2, page 201, the following particulars are given, but no authority is adduced for them.—“Between the years 1767 and 1787, the average cost of manufacturing a pack of long wool into yarn, was as follows:—One pack of Lincoln or Kent wool would cost £7 10s.; the washing and combing would cost £2 10s.; the spinning £9; the carrying out £2; the average Norwich profit would be £3.”

“About the same time a woolcomber, with £3,000 capital, would make four hundred and sixteen packs in one year, or £1,200 profit. His return would be £8,736.”

† *Old Monthly Magazine*, for 1798, (vol. 6, page 413.)



has been experienced in composing a trustworthy account out of the often contradictory statements of the partial and prejudiced writers of the age, who appear to have ever some favourite view or opinion to sustain, whereunto every other consideration is sacrificed. These are sufficient reasons for giving almost entire the relation of Mr. Taylor, who had long been conversant with the subject.

The trade of Norwich (he observes) did not formerly so much depend upon the foreign demand, as it does at this time, (anno 1798.) From the beginning of the present century till within these forty years, this kingdom alone took off a very considerable quantity of stuffs of various kinds. The *crapes* of Norwich were in very common use, and during the administration of Sir Robert Walpole, and so long as the city had powerful friends at Court, the public mournings were always ordered to be in Norwich crapes. This unpleasant fabric, unsupported by ministerial influence, soon fell into disgrace, and gave way to more elegant manufactures. And the destruction of our home trade was completed by the prevalence of articles made from cotton, which the inventions of Arkwright and others rendered much cheaper than formerly. Excluded in a large degree from a share in the trade, our merchant-manufacturers did not sit down supinely, without making an effort for compensating in some other way, the loss which they had sustained. The correspondence which they had begun on the Continent, they now extended to every point of the compass; by sending their sons to be educated in Germany, Spain, and Italy, they qualified them for the execution of their plans, and at the same time cultivated a more familiar connection with those countries. Their travellers penetrated through Europe, and their pattern-cards were exhibited in every principal town, from the frozen plains of Moscow to the milder climes of Lisbon, Seville, and Naples. The Russ peasant decorated himself with his sash of gaudy callimanco, and the Spanish hidalgo was sheltered under his light cloak of Norwich camblet. The introduction of their articles into Spain, Italy, Poland, and Russia, soon made the manufacturers ample amends for the capriciousness of fashion in their own country. The tastes of foreign nations was now consulted, the gravity of the Spaniard was suited in his plain, but fine textured camblet. The loom was taught to imitate the handy works of Flora, and the most garish assemblage of colours of every dye, satisfied the vanity of the Swabian and Bohemian female. The great fairs of Frankfort, Leipsic, and Salerno, were thronged with purchasers of these commodities, which were unsuccessfully imitated by the manufacturers of Saxony.

Norwich was now crowded with its looms, every winter's evening exhibited to the traveller entering its walls, the appearance of a general illumination. From twenty miles around, the village weavers resorted to it with the produce of their looms, and though the distaff and the spinning wheel throughout Norfolk and Suffolk were incessantly plied, yet the produce was inadequate to the demand. It became necessary to increase the importation of bay yarn from Ireland, of which more was annually consumed here, than, but a few years before, was imported into all England.

From this meridian of its prosperity, the manufactory began to show symptoms of declension before we entered upon this war,\* which has so effectually ruined it; yet in a tolerable trade, it was estimated that about 50,000 tods of wool, chiefly of the growth of Lincolnshire, were combed and spun in the county of Norfolk, which employed about five hundred combers, and furnished spinning work for most of the poor women and children in the county. Besides this, great quantities of yarn were brought from all the neighbouring counties, and at that time, even from Scotland.

Some years ago, the returns of the manufactory were estimated to be about £1,200,000 per annum; at present, when the merchant is shut out from most of his foreign markets by war, and from his own by fashion, they must fall away very much below this estimate, but supposing them to be only £800,000, the price of labour bestowed on them will be £685,000, whilst the value of the raw material, dyeing stuff, oil, soap, and coals, will be only £115,000. This manufacture furnishes about fifty distinct occupations, reckoning from the sheep shearers to the mariner, who takes charge of the bales; and in a full trade not fewer than a hundred thousand hands are employed in its different branches. Its importance will be sufficiently apparent, when we reflect how much the value of the raw material is increased by labour, and that this price is drawn from foreigners, for the maintenance of our poor. Compared with this, what are the national advantages of the sale of £800,000 worth of coffee or sugar in Hambro' or Lubeck. The staple articles of Norwich may be said to be its fine camblets, and its worsted damasks and flowered satins; though the latter, by the introduction of much inferior bed furniture are falling into disuse. The East India Company give annually their orders for a considerable quantity of our fine camblets; and during the torpor of the Spanish and Italian trades, this circumstance has greatly alleviated the distresses of the poor.†

Norwich, Nov. 8, 1798.

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These camblets, known by the name of 'broad whites,' at Norwich, were sent in large numbers to China, where the mandarins used them for winter robes. Camblets were originally

\* In one of the Letters of 'Senex' in the East Anglian Newspaper, (Feb. 21st, 1832,) before referred to, he relates that the Norwich foreign trade suffered much from the American War, "when our commerce was so much interrupted by naval enemies, and by those swarms of privateers with which the Channel abounded. At the peace it broke forth again, and the *twelve years that followed, kindled up its evening with something of the lustre of its meridian.* The wars of the French Revolution extinguished it."

† The following is extracted from Eden's State of the Poor, vol. 2, page 177, published in 1797.—"The Norwich trade has, for some years, been in a declining state, which is ascribed to the following causes:—to the prevalent taste for wearing cottons, which has necessarily lessened the consumption of stuffs; the low wages of the weavers and spinners, who are in a considerable degree at the mercy of the manufacturers, and are not supposed to receive better pay than they did twenty years ago; and lastly, to the war, which has put a stop to the exportation of stuffs to France, Flanders, and Holland; and from the high price of insurance,



furnished by the Flemish India Company, who manufactured them in part, if not entirely, of mohair. "I have been shown," says 'Senex,' who has before been quoted, "an ancient pattern of that article, which both as to the fabric and the colours, was exceedingly rich and beautiful. Afterwards our India Company supplied an article made of wool, which gradually superseded the other. The Company, for a long time, exported only the finer kinds; the doubles made of double warp and shoot, and the fine singles made of double warp and single shoot. At that time, the portion of freightage which was allowed to the captains and chief officers of the China ships, was in part occupied with camblets of a coarser kind; but the Company finding that these interfered with their shipments, took the whole into their own hands about the close of the century, and began to complete their orders by adding a number of coarser pieces, equal to the joint amount of the fine."\* The coarser descriptions of camblets here mentioned were, in part, furnished by the Leeds makers. In the year 1798, the East India Company exported to India and China 6,563 pieces of camblets which were valued at prime cost at £39,174, and in 1799, 12,972 pieces valued at £75,671.

Fortunately this work has been furnished by Henry Hall, Esq., Leeds, the venerable and respected Chairman of the 'Worsted Committee,' (Mr. Hall has for half a century been Chairman of the Worsted Committee,) with a view of the worsted manufacture in the West-Riding towards the end of the century, which could only have been supplied by himself, as one of the last of the stuff-makers of a bygone age. The

which has much reduced the trade to other countries. The merchants and manufacturers are now overstocked with goods, and the weavers are consequently very ill supplied with work; and what is worse, are obliged to work up the worst materials. While business was brisk, an industrious weaver might earn twenty-one shillings a week, from fine work; and from coarser work, twelve shillings a week. The average earnings of weavers, at present, are thought not to exceed seven shillings or eight shillings a week. Women weavers earn from five shillings to six shillings a week. Females, however, are principally employed in spinning, reeling, winding, &c., in which they earn from two shillings to four shillings a week. Children, in spinning, winding, &c., earn about two shillings a week. Of late the wages of both women and children have been very low."

\* Letter of 'Senex' in the East Anglian Newspaper, Feb. 21st, 1832.



MS. written in the neat and unshaken hand of a person in the prime of life is itself a curiosity. These 'Reminiscences' present a 'bird's eye' view of the manufacture, at once faithful and comprehensive, and although a portion relates to the commencement of the next century, yet for the sake of continuity of narrative, the whole has been printed here.

'REMINISCENCES OF THE WORSTED MANUFACTURE, BY AN OCTOGENARIAN.'

"My earliest recollections are connected with the worsted manufacture, with every branch of which I became familiar from my father's business being carried on under the domestic roof, and its precincts. At that distant date it consisted solely of the article of camblets dyed in the yarn, plain colours, and mixed or shots. Of these stuffs was formed the general dress of the lower classes of females, and the manufacture of them at Leeds was very considerable. The principal makers were Clapham and Hall, Henry Hall, William Thompson, Obadiah Dawson, W. and G. Benson, J. Heaton, and others. About the year 1783, the manufacture of camblets, for general wear, declined; wildbores and tammies finished as wildbores, being substituted for them. There continued for some time longer a considerable export of camblets to the north of Europe. The manufacture of fine wildbores introduced several new makers into the trade: the one of greatest repute was Samuel Dixon, of Beeston. There were also two Scarfes, Richard Pullan, afterwards a partner with Priestley and Gatliff, &c. A few twills and plainbacks were made for a short time, but, being of too good a quality and high priced, were soon superseded by the lighter and cheaper mill-yarn goods of Bradford, and the old articles and hand yarn became extinct. I closed my manufactory about the year 1815. The manufacture of low plaids has since been considerable, but is much reduced, and the worsted manufacture at Leeds is at a low ebb. The hand yarn manufacture, of which I have been treating, was an anxious and laborious occupation, requiring the eyes and hands of the master in its several processes. The spinning was performed in cottage houses by the wife

and children, partly in the neighbourhood, and partly in the distant parts of the West-Riding, in which case we employed agents, mostly shopkeepers. On these you could not depend for employing only good hands: they would not offend a shop-customer by refusing her work. One obvious evil in this family-work was the teaching of the children; and in sorting our yarns, we not only met with whole hanks clumsily spun, but, not seldom, good and bad reeled in the same hank. This rendered the sorting of yarns a vexatious process. In this manufacture, it was difficult to regulate the employ of the weavers by the supply of yarn, the spinning being, in a great measure, done in the winter in the farming districts, there being out-door work for the families in summer. I have known our stock of yarn so low in summer, that weavers have sometimes had to wait a few days for warps. This evil was partly met by some of them going annually to the harvest in the low country, a work now performed by the Irish. The manufacturers of the present day can form no conception of the labours of their predecessors. The old manufacture was necessarily restricted, and an increased demand could not be met by a proportionate increased supply."

"I have to add a few recollections of the state of the worsted manufacture in the neighbouring towns of Halifax, Bradford, and Wakefield. In the year 1786-7, when a scholar at Hipperholme, I had the privilege of meeting my uncle, of the firm of Clapham and Hall, Leeds, at Halifax market, to gain a little insight into the trade. The Piece Hall was then a busy scene, every room occupied, and great business done weekly in all the varieties of single and double stuffs, with the merchants of Leeds chiefly, but also of Halifax. My earliest connexion with Bradford was about 1795, at which time the stalls in the Piece Hall were in general occupied, and a great business was done in the several kinds of worsted goods which were then in use. I was a regular attender at the market for twenty-six years, during which the change from hand to machine yarn took place. Soon after my retirement, fancy and mixed articles sprung up, and Bradford became the emporium of the stuff trade. In my early

days, the mercantile trade can scarcely be said to have existed in Bradford. The Leeds and Halifax merchants, also those of Wakefield, purchased, finished, and disposed of the goods at home and abroad. I was acquainted with the Wakefield market from the year 1790. Tammies were made to a great amount in the villages within a few miles of Wakefield. This was the only article, hence the name of Tammy Hall given to their Hall. The foreign merchants were the great buyers: the glazed tammies were at that time in great demand on the Continent. Tammies then came into home use finished as wildbores, as a substitute for camblets; for a few years there were some makers of fine wildbores; but, on the failure of the old tammy trade, the Hall was no longer worth attending. A few of the wildbore makers took their goods to Bradford—I was frequently the only buyer. About the year 1817, the Hall at Wakefield was closed, and has been converted into a factory. Wakefield is well situated for water, coals, and water carriage; but there was no spirited individual to raise up the factory system; and we must attribute its loss of the worsted trade mainly to its manufacture having being confined, as it were, to one article which had gone out of vogue, and the lack of ingenuity to devise new articles.”

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In casting the eye backward, and reviewing the condition of the worsted manufacture during the last fifty years, one is forcibly struck with its rapid development in the West-Riding. At the commencement of the century, it existed there merely in an infant state; now it had attained a large stature and strength, comprising in fact the chief portion of the stuff trade in England, either as regards the quantity produced, or its value. In the preceding pages many instances have been given of the worsted industry removing from the west of England, from Northamptonshire, and other places. Early in the century, the tammy business formerly so extensive at Coventry, began to decline there on the manufacture of silk ribbons being introduced, and eventually the West-Riding, especially Wakefield, became the principal mart for the class of goods



which formerly constituted the peculiar trade of Coventry. Much also of the serges, and serge imperial, which were made in the neighbourhood of Exeter, and other portions of Devonshire, now employed the looms of the parish of Halifax; but still Exeter continued to produce large amounts of these descriptions of fabrics. It is calculated that Exeter at this date exported in woollens and worsteds, namely, kerseys, serges, and other articles, to the large amount of £600,000. Thus Yorkshire, especially Halifax, Bradford, and Wakefield, had drawn from Devonshire, Warwickshire, Northamptonshire, and Norwich, a considerable portion of their manufactures: serges from the west of England; tammies from Warwickshire; shalloons from Kettering; camblets and many other articles from Norwich. In the early part of the century, the stuffs of Yorkshire were principally consigned to merchants in London, and elsewhere out of the county, undyed and undressed, because the best modes of either process were unknown in the north. It is related that in those days, the Yorkshire stuffs were forwarded to London and Coventry to be dyed. The latter city stood distinguished for a blue dye called ‘Coventry true blue.’ Afterwards the arts of dressing and finishing pieces in good style were introduced into Yorkshire. Numerous dyehouses were erected during this half of the century in Leeds, Halifax, Bradford, and Wakefield, for dyeing and finishing worsted goods. Instead of merchants from a distance purchasing these stuffs, a race of native merchants sprung up who had extensive establishments. The demand to Spain, Portugal, Italy, and the Levant, took off the greater part of the worsted goods manufactured at Halifax, and the trade of that town, up to the year 1792, was very brisk, but it shortly afterwards declined. Those of Wakefield and Bradford, consisting of tammies and calimancoes, were consumed principally in England and her Colonies. These, for the latter quarter, were forwarded from Liverpool. Large quantites of the worsteds of the West-Riding were also shipped to Holland and Germany by way of Hull.

Proof of the vast increase of the population of the West-Riding, consequent on the extension and prosperity of its

manufactures, is afforded by the subjoined statistics, collected from one of Marshall's Tables, shewing the marriages, baptisms, and burials, in that district, from the year 1700 to 1800.

YEAR.	MARRIAGES.	BAPTISMS.	BURIALS.	EXCESS OF BAPTISMS OVER BURIALS.
1700	..	6,628	6,342	286
1760	2,986	10,712	6,926	3,786
1780	3,606	13,976	8,998	4,978

From the year 1700 to that of 1750, there is a uniform rise, whilst from 1780 to 1800, the increase is also gradual. The towns of the West-Riding, where the worsted industry prevailed, chiefly participated in this growth. For instance, in 1738, there were in Halifax 1,100 families in the town; in 1764, 1,272, and in the parish, 8,244; which, at five to a family, gives 6,360 inhabitants to the town, and 41,210 to the parish. At the close of the century these were respectively augmented to upwards of 8,000 and 63,000. There is not extant data shewing the precise increase of Leeds, Bradford, and Wakefield, during this interval, but they had undoubtedly much extended their population. There is in a return of houses chargeable to the window tax in 1781, some data to form a judgment as to the relative number of middle class people resident in the following towns. In the town of Leeds, there were 1529 houses so chargeable; in Wakefield, 544; in Halifax, 440; Bradford, 403.

The following table of the price of wool, from 1750 to 1780, is drawn from two sources; first, from a work published in 1782, respecting the exportation of wool,\* in which it is stated, that the price from 1745 to 1781, had "been ascertained from the best manuscript documents that could be procured, comparing from five to ten different accounts, for the purpose of fixing the medium price:" second, from a

\* "The Propriety of allowing a qualified Exportation of Wool discussed historically."

table of the price of Kent long wool, compiled by Mr. Thomas Legg, woolstapler, London.\*—

	PER lb.	KENT LONG WOOL PER lb.		PER lb.	KENT LONG WOOL PER lb.
	d.	d.		d.	d.
1750	8		1765	9	7
1751	8		1766	$9\frac{1}{4}$	8
1752	$8\frac{1}{2}$		1767	$8\frac{1}{2}$	$7\frac{1}{2}$
1753	$6\frac{1}{2}$		1768	7	$6\frac{1}{2}$
1754	$6\frac{1}{4}$		1769	$6\frac{1}{2}$	$6\frac{1}{2}$
1755	6		1770	6	7
1756	$6\frac{1}{2}$		1771	$6\frac{1}{2}$	$7\frac{1}{2}$
1757	$7\frac{3}{4}$		1772	$6\frac{1}{2}$	$6\frac{1}{2}$
1758	$8\frac{1}{2}$		1773	$6\frac{1}{2}$	7
1759	$8\frac{1}{2}$	$7\frac{1}{2}$	1774	$7\frac{1}{2}$	7
1760	8	$7\frac{1}{2}$	1775	8	8
1761	$7\frac{3}{4}$	6	1776	8	8
1762	$7\frac{1}{4}$	6	1777	$7\frac{3}{4}$	$7\frac{1}{2}$
1763	$8\frac{1}{2}$	7	1778	$6\frac{1}{2}$	$5\frac{1}{2}$
1764	$8\frac{1}{2}$	8	1779	5	6

Soon after the breaking out of the American War, the rates of wool began to lower, but they seem not to have been materially affected until 1778, when the prices of combing wool fell rapidly, while short clothing wool rather rose in value. On the termination of the war, long wool, as will be seen in the next table, gradually rose. These fluctuations, indicate, in a degree, the state of our worsted manufacture; for there can be no doubt that a large demand and a prosperous trade in worsteds enhanced the price of wool, whilst the reverse of this caused a corresponding depreciation.

From the year 1780 to 1800, the information respecting the price of long or combing wool is more precise and reliable. Several authorities have been chosen in constructing the following tabular statement, namely, a table in Rees' Cyclopædia, exhibiting the prices of heavy combing wool of Nottinghamshire and Leicestershire, "taken from the most

\* This Table was given by him in evidence before the Committee of the House of Lords, in 1828, respecting the state of manufactures from wool.



authentic source," and it is added, "we consider the value of this wool to have been fully equal to that of Lincolnshire on each year;"\*—a continuation of the table above mentioned, compiled by Mr. Legg, shewing the price of Kent long wool—and lastly, two statements, one of the price of long wool of Northumberland and Yorkshire, drawn up by Mr. William Barff, woolstapler, Wakefield; the other, of the price of Lincolnshire wool, by Mr. Matthew Thompson, worsted spinner and manufacturer, Bradford.†—

	NOTTS. AND LEICESTER WOOL PER lb.	KENT LONG WOOL PER lb.	NORTH. & YORKS. LONG WOOL PER lb.	LINCOLN WOOL PER lb.
	d.	d.	d.	d.
1780	5	6½	4	
1781	4¾	5	3¾	
1782	4	5½	3¾	
1783	5¼	6½	4	
1784	7	7	4	
1785	5¼	7	4½	
1786	5¾	7½	5½	
1787	7½	9½	6½	
1788	7¼	9	7½	
1789	7¾	8½	7¾	8
1790	7¾	9½	7¾	8
1791	8½	9	7¾	9
1792	9¾	11½	7¾	10½
1793	7¾	9½	7¾	8
1794	7½	9½	8	8
1795	8¼	10	8½	9
1796	9	9½	9½	10
1797	9	9½	7½	8½
1798	7¾	9½	8	7¾
1799	9	12	9	8½

The difference above observed in prices, is easily explained, when the variations in the quality of the wool are considered. One point is very obvious, namely, that notwithstanding the war, the prices of combing wool gradually

\* Rees' Cyclopædia, article 'Woollen Manufacture.'

† Taken from the evidence of Mr. Barff and Mr. Thompson, given in 1816, before a Committee of the House of Commons, on the tax proposed on foreign wool.

rose in the period comprised in these last twenty years of the century, and indeed advanced during the very heat of the conflict. This seems conclusive, that our worsted trade was certainly not in a languishing condition.

In the latter part of this century much attention had been given to the breeding of sheep. Whilst Queen Elizabeth sat upon the throne the commercial and manufacturing enterprise of the nation aroused itself from a long slumber, and the improvement of our native breed of sheep, especially with regard to its fleece, began to be a peculiar object of attention. The distinguishing feature lay between long and short wool breeds, the former being the most highly esteemed. For the last two hundred years these improvements were from time to time, but slowly, carried on. At length an impetus was given to them by the devotion of George III. to agricultural pursuits, especially the breeding of sheep. Among the most eminent of the improvers of our sheep ranks Mr. Bakewell, of Dishley, in Leicestershire, but his endeavours were more directed to the production of mutton than to the pile. In the year 1792, the British Wool Society deputed several well-qualified gentlemen to make a survey of the principal counties of England distinguished for the excellence of their breeds, and they reported the result to the Society.\* It belongs not to this work to quote their report so far as relates to short wool sheep. They thus describe the principal long wool kinds. "The Lincolnshire breed is native, domesticated, and hardy. The principal characteristics in which they differ from other sheep are a considerable weight of collar, (producing a pound and half of wool,) greater size, and heavier carcase; the average weight of fleece is ten pounds; price per tod of twenty-eight pounds, twenty-six shillings. The hog wool is sixteen to eighteen inches in length; the wether from ten to twelve inches: colour, a beautiful white." Since this time the breed has been much

\* "Observations on the different Breeds of Sheep, and the State of Sheep-farming in some of the principal Counties of England, drawn up from a Report transmitted to Sir John Sinclair, Chairman of the Society for the improvement of British Wool, by Messrs. Redhead, Laing, and Marshall."

crossed with the new Leicester rams, causing great deterioration of the fleece. The report states, "there are three different breeds of sheep in Leicestershire:—the old Leicester, the new Leicester or Dishley breed, and the common forest sheep. The fleece of the Dishley breed weighs at an average eight pounds, and sells at tenpence per pound." The new Leicester, a long woolled sheep, had by the care of Mr. Bakewell become already the chief breed, because it combined excellence of flesh with a fine quality of wool. When he devoted his capital and skill to the subject, sheep were not fit for the butcher until four or five years old. By judicious crossing, he produced a stock that fattened and were fit to be killed at two years. In Nottinghamshire this new Leicester breed prevailed, and was also common in Yorkshire; the Holderness sheep resembled those of Lincolnshire. In Northumberland there were two kinds:—the Cheviot in the higher ranges, and in the lower parts what were called Mug sheep abounded, which had been greatly improved by the introduction of the new Leicester breed. The county of Durham contained a peculiar and valuable sheep, found near the estuary of the Tees, and called the Tees Water breed. It was the largest in the island: now, however, it seldom existed pure, being crossed with the new Leicester. There were also some other local varieties such as that of Romney Marsh, in Kent. Mr. Luccock thus indicates, about this period, the particular localities of our long woolled sheep. "Long wool," he observes, "is found in many detached parts of England, but much more commonly on the eastern than the western side, and often nearer the coast than the middle of the kingdom. Among the larger ranges of long woolled sheep, the first to be noticed, and the most northern, is situate near the mouth of the Tees. The second, which may properly be denominated the Lincolnshire district, comprehends the south-eastern point of Yorkshire, nearly the whole of Lincolnshire, and the fen lands of Huntingdon, Cambridge, and Norfolk. This kind of wool is found in the smaller marshes of Essex and of Kent, which surround the inlets of the sea, but is much more abundant in those of Romney



and Guildford. We meet with it in the counties of Dorset, Devon, and Cornwall, upon the Cotswold Hills, in some detached parts of Lancaster, Oxford, Bedford, and Stafford, through the whole of Leicester, Rutland, Northampton, and Huntingdon, and along the banks of large rivers. In those extensive districts, some of which are widely separated from each other, a much greater difference is observable in the characteristic features of the sheep, than in the qualities of the pile which they produce. Long wool is remarkable for the similarity of the fleeces both in weight and colour, in the staple and quality of the fibre.”\* It is abundantly evident that from the time of the first introduction of sheep into the island, those which fed upon the low, alluvial soils would produce long wool.

Having thus treated upon the varieties and localities of long wool sheep, it will form an appropriate sequel to give Mr. Luccock’s estimate of the quantity of long wool grown in England. He estimates the total number of sheep in England at 26,148,463,† and the quantity of wool annually produced at

\* Luccock on English Wool. His estimate of sheep in England, &c., was drawn up in the year 1800.

† This number he makes out thus:—

Number of long-woolled sheep in England and Wales	4,153,308
„ short-woolled ditto ditto ..	14,854,299
<hr/>	
Total number shorn	19,007,607
Slaughter of short-woolled sheep .. .. .	4,221,748
Carrion of ditto .. .. .	211,087
Slaughter of long-woolled ditto .. .. .	1,180,413
Carrion of ditto .. .. .	57,020
Slaughter of lambs .. .. .	1,400,560
Carrion of ditto .. .. .	70,028
<hr/>	
	7,140,856
<hr/>	
Total number of sheep and lambs .. ..	26,148,463
<hr/>	

In 1774, Arthur Young calculated (in his Political Arithmetic) the number of sheep in England to be 25,589,214; and it was estimated that they yielded 76,769,262 pounds of wool. Even according to this, which has never been considered an outrageous statement, there had been a very large increase of our flocks between the year 1750 and 1774, very much greater than had occurred in any preceding period of our history.

393,236 packs, thus distributed: short wool, 202,737; long wool, 131,794,\* and skin wool, 58,705 packs. He thus distributes long wool sheep—

	NUMBER OF LONG WOOL SHEEP.	NUMBER OF PACKS.	WEIGHT OF FLEECE lbs.
<i>Lincolnshire</i> —			
Rich Land and } Marshes .. }	1,329,125	49,477	9 & 8
Miscellaneous ..	505,657	16,855	8
<i>Northamptonshire</i> ..	640,000	16,000	6
<i>Leicestershire</i> .. ..	380,528	11,100	7
<i>Kent</i> —Romney Marsh	185,000	5,400	7
The Marsh .. ..	108,330	3,160	7
<i>Gloucestershire</i> ..	200,000	6,666	8
<i>Devonshire</i> .. .. .	193,750	6,458	8
<i>Warwickshire</i> .. ..	160,000	3,333	5
<i>Yorkshire</i> —Holderness	84,000	2,800	8
Other parts .. ..	14,310	477	8
<i>Huntingdonshire</i> ..	87,500	2,552	7
<i>Durham</i> .. .. .	67,200	2,520	9
<i>Rutlandshire</i> .. ..	114,000	2,370	5
<i>Cambridgeshire</i> .. ..	41,688	1,390	8
<i>Norfolk</i> .. .. .	38,500	1,123	7
<i>Staffordshire</i> .. ..	3,720	113	7
	4,153,308	131,794	

It will be observed that Mr. Luccock's estimate of the quantity of wool grown in England falls much below that assumed (600,000 packs) by Mr. Hustler, in 1788, and also given in evidence, by his son, before a Committee of the House of Lords in the year 1800. (See hereafter, and also Mr. Luccock's observations on this discrepancy.) In the

\* It will be observed that the combing wool amounts to about one-third of the whole of the produce of the flocks of England. The 600,000 packs of wool estimated as before mentioned, by Mr. Hustler to be the produce of England, in 1788, were also thus divided:—

	PACKS.
Fine wool for cloths .. .. .	100,000
Coarse ditto .. .. .	300,000
Combing ditto .. .. .	200,000

So that the proportion of combing wool to the other agrees with that of Luccock.

preliminary remarks of Mr. Southey, in a recent edition of his work on Colonial Wool, commenting on our home production of wool, he has the following passage. "A reflecting and experienced correspondent, writing from Bradford on this subject, expresses his opinion in these words: It is almost universally admitted that Mr. Luccock's calculation of the quantity of wool grown was erroneous, and that it much exceeded his statement." This is the only instance in which the author has observed Mr. Luccock's estimate impugned. McCulloch, no mean authority on such a subject, remarks that before that estimate all was wild conjecture. There can exist no doubt that much pains was taken in preparing it by a person having large experience in English wool, and that it bears every mark of being entitled to credit.

Like the woolcombers of Norwich fifty years before, those of the West-Riding were a turbulent ill-ordered class, and occasioned much trouble to their employers. There were clubs of woolcombers in various parts of Yorkshire, for the pretended purpose of protecting their craft, but in reality to overawe the masters, and raise wages above their natural level. One of these combinations at Halifax became exceedingly obnoxious, so as to render the interference of the magistracy necessary. From an information laid against some of the members of the club, in the year 1790, it appears that if any stranger woolcomber came to the town and did not solicit work, he received from the club a double ticket, that is, one shilling instead of eightpence, and that they persecuted in various ways those who did not conform to their rules. Thus when Cartwright's combing machine became public, the manufacturers eagerly availed themselves of it, in order to dispense with the services of the hand-comber. Cartwright's combing machine, patented in 1792, will hereafter be described. In the same year Mr. William Popple, of Cuckney, in Nottinghamshire, also invented a combing machine capable of preparing wool of a shorter staple into worsted. Some of these combing machines were set up in Bradford by Mr. Robert Ramsbotham, about 1794, and received the appellation of 'big Bens.' The woolcombers, finding their occupation in danger, presented a



number of petitions to Parliament against the use of combing machines, and procuring friends in the Legislature, a Bill was brought into the House of Commons "for the purpose of protecting woolcombers from being injured in their manufacture by the use of certain machines lately introduced for the combing of wool." The Worsted Committee exerted itself energetically to prevent this measure becoming law. Petitions were presented to Parliament declaring that it would be exceedingly detrimental to the manufacture of long or combing wool, and prevent its extension. A deputation from the Committee proceeded to London to oppose the Bill, and finally it was rejected. These proceedings humbled the woolcombers, and rendered them more tractable. When the combers accepted reasonable wages, the combing machine being an imperfect instrument, soon fell into comparative disuse, hand-combing being so much a superior process.

From the comber the subject naturally descends to the spinner. The method pursued in Norfolk and other seats of the manufacture, a hundred years ago, was now in vogue in Yorkshire. There is in Mr. Forbes' masterly Lecture on the Worsted Manufacture, delivered before the Society of Arts, a description relating to the putting out of wool to spin, which is at once faithful and graphic, and will convey to the reader a vivid conception of the whole process. "The manufacturing processes at this period were (observes Mr. Forbes,) characterised by the most primitive and arcadian simplicity, and a degree of 'slowness' which, in these railway times, we can scarcely realise. The work was entirely domestic, and its different branches widely scattered over the country. First, the manufacturer had to travel on horseback to purchase his raw material amongst the farmers, or at the great fairs held in those old towns that had formerly been the exclusive markets, or, as they were called, 'staples' of wool. The wool safely received was handed over to the sorters, who rigorously applied their gauge of required length of staple, and mercilessly chopped up by shears or hatchet what did not reach their standard, as wool fit only for the clothing trade. The long wool then passed into the hands of the combers; and

having been brought back by them in the combed state, (technically called 'top,') was again carefully packed, and strapped on the back of the sturdy horse, to be taken into the country to be spun. For this end, the West-Riding manufacturer had not only to visit the villages in the immediate neighbourhood of Halifax, Bradford, &c., but used periodically to traverse the romantic hills and dales of Craven. Here at each village he had his agents, who received the wool, distributed it amongst the peasantry, and received it back as yarn. The machine employed was still the old one-thread wheel; and in summer weather, on many a village green or hill-side, might be seen the housewives plying their busy trade, and furnishing to the poet the vision of 'Contentment spinning at the cottage door.' Returning in safety with his yarn, the manufacturer had now to seek out his weavers, who ultimately delivered to him his camblets, or russels, or serges, or tammies, or calimancoes (such were then the names of the leading fabrics,) ready for sale to the merchant, or delivery to the dyer."

To this interesting narrative the following communication, from a gentleman conversant with the Bradford trade at the close of the century,\* will form a suitable appendix. "In putting out wool to spin we sent a pack of tops at once to Skipton by the canal. A boat came on purpose for the tops of various people. The pack was generally consigned to a shopkeeper or small farmer; the former the oftenest, because it brought custom to his shop. He had for putting out a halfpenny per pound. We had spinning done in Lancashire as far as Ormskirk; in Craven, and at Kirby Lonsdale; in Wensleydale, Swaledale, and other parts of North Yorkshire. Much difficulty was experienced with the yarn; we had to sort it, and from the same top there would be yarn as thick as sixteens and as small as twenty-fours, shewing the difference in the spinners. For a pound of twenties we gave on an average from ninepence to a shilling, and a good spinner from Monday morning to Saturday night might earn two

\* Thomas Crosley, Esq., of Bradford.

shillings and sixpence a week.” An aged manufacturer gives the following novel view of the trade in the latter end of the century. “I went to York to buy wool, and at that time it averaged about a shilling per pound. I then came home, sorted, and combed it myself. After being combed it was oiled and closed, that is, the long end of the wool and the short end were put together to form a sliver. It took a number of slivers to make a *top*, each *top* weighing exactly a pound. Then I took it to hand spinners twenty or thirty miles distant. The mother or head of the family plucked the tops into pieces the length of the wool, and gave it to the different branches of the family to spin, who would spin about nine or ten hanks per day: for the spinning I gave a halfpenny per hank, and sometimes one shilling and twopence for every twenty-four hanks over. Sometimes I took the tops to shopkeepers in the spinning districts, and allowed them a sum of money per score for delivering the tops and receiving the hanks from the spinners. When I got it home I sorted the soft from the hard spun yarn, and made the former into weft, and the latter into warp. The weft was put upon a swift, and prepared upon a spool for the weavers. At that time the fly shuttle had not come into use in weaving worsted. The weavers forced the shuttle through the warp by the pressure of the fingers left and right. The process of preparing the warp was a slow one. There was no twirling or tying in, but every thread of the warp was drawn with a hook. At the time I am speaking of, it would take a girl fourteen to fifteen years of age to spin from nine to ten hanks a day at a halfpenny per hank, that would be about six shillings per gross for spinning. Now, a girl at the mill would at the present day, spin, including preparing, three gross per day at least, that is more than forty-five times as much.”\*

Added to the difficulties under which business was transacted, it may be noticed, that the wool-buyer had to traverse the country along wretched roads, infested by such bold highwaymen as Turpin, and a host of less notorious characters,

\* Mr. William Jennings, of Windhill, near Bradford.



who, to a late period, rendered travelling a perilous undertaking. Then the mode of conveyance, mostly by means of long trains of packhorses, and in other cases by stage-waggons, was extremely slow and expensive, and increased greatly the obstacles which a manufacturer in those times had to surmount. The formation of turnpike roads in Yorkshire during the latter part of the century, the widening and repairing of the highways which then took place, the mighty undertaking of the Leeds and Liverpool Canal forming a trunk communication from the east to the west sea and intersecting the spinning country of Craven, and the completion of similar but smaller undertakings to Halifax and Bradford, gave an impulse to trade in these districts, and rendered its transactions much less tedious and uncertain.

For spinning, the whole range of Yorkshire, and some parts of Lancashire, Cheshire, Derbyshire, and Westmoreland, were more or less engaged. One manufacturer chose, as his peculiar ground, Wensleydale or Swaledale; another, the forest of Knaresbrough; others, various parts of Craven and Lancashire, and some Cheshire, of which Stockport formed the chief depôt. To shew the large number of persons employed in the northern valleys of England, I have before me an account of the drawback allowed to forty-four persons who followed the business of combing wool, in Wensleydale, in 1792. Notwithstanding the multitudes employed in spinning, there was an insufficient supply of yarn, especially about the year 1780.

This scarcity of yarn no doubt hastened very much the adoption, in worsted spinning, of the wonderful automatic machines which had for some time been extensively employed in the spinning of cotton. Singularly enough many years elapsed before the contrivances of Hargreaves, Arkwright, or Crompton, were applied to spinning wool. But still long before the close of the century, worsted factories had come into operation in Lancashire and Yorkshire. The former county having led the way in spinning cotton, the transition to worsted was obvious, and so far as can accurately be ascertained by oral testimony at the present distant date, the first

worsted mill was erected at Dolphin Holme, and the yarn forwarded to the worsted manufacturing districts. It was built in the year 1784, by Mr. Thomas Edmondson, (Ironmonger,) Mr. Addison, and Mr. Satterthwaite, all of Lancaster. Intending to carry out in worsted that which had been accomplished in cotton by the aid of machinery, these parties leased of the Duke of Hamilton a few acres of land, part of the Dolphin Holme estate, with right of water from the river Wyre, for the term of sixty-one years. Here they carried on worsted spinning, under the firm of Thomas Edmondson and Co., until the year 1791, when the partners having quarrelled the mill was closed, and the firm dissolved, the two latter gentlemen relinquishing the business altogether. It had, from the difficulties to be encountered in first applying machinery to the spinning of wool, been an unsuccessful concern. Tradition reports that this first mill-spun yarn was knotty, broken, and of a very inferior description. The Dolphin Holme Mill, after it had remained closed for two or three years, was let in 1795, to Mr. Thomas Hinde, his son, and two other partners, at the yearly rent of five hundred pounds, payable to the original lessees, and paying for the machinery according to a valuation. This machinery, according to the testimony of a person who saw it, consisted of water-frames with only four or six spindles in a box, and of very rude construction. Hindes and Co., soon displaced the old, by new and improved machines, so that one of the original lessees of the mill, visiting the place afterwards, declared that if, when he and his partners carried on business, they had possessed such superior spinning frames, he could have bought the whole of Lancaster with the wealth which would have accrued. At this establishment Hindes and Co., carried on the spinning of worsted upon a large scale for forty years, and it deserves to be recorded, that it was the first public building in the kingdom where gas was first brought into use.

Next, in order of time to Dolphin Holme Mill, stands the Low Mill at Addingham. In the year 1787, Mr. John Cunliffe and John Cockshott of Addingham purchased a piece of land called Smithy Greaves, and having first constructed a



weir across the river Wharfe to obtain water power, began to erect a mill, which when finished, they used for spinning worsted.\* Aged spinners mention that the first mill-spun yarn sold in Bradford market, came from this factory at Addingham.

Hewnden worsted mill, in the parish of Bradford, was erected in 1792 by Mr. William Nichols and his partners. The worsted mill at Leeming, in Haworth, was built a short time previously, and also that at Ilkley.

Among the earliest erected worsted factories must be noted the mill at Mytholmroyd, near Halifax. On the quarrel with his partners at Dolphin Holme, Mr. Edmondson, nothing daunted by his former want of success, with characteristic energy, began in 1792 to erect the works at Mytholmroyd, and thither most of his former mill hands followed him.†

Bradford, destined to become the very centre of spinning improvements in worsted, did not lead the way in them. The first spinning machine in Bradford was set up somewhere about the year 1794, by Mr. James Garnett of Bradford, grandfather of William Garnett, Esq., one of the most eminent worsted spinners of the present day. From the mouth of John Hutton, late overlooker in the factory of the latter gentleman,‡ the following statement has been taken:—"I am seventy years of age. When about ten years old I went to school in High Street, and remember spinning machines being used in the Paper Hall, by Mr. James Garnett, who

\* It is stated in the Conveyance of the land, in 1787, that it "was intended to erect a cotton mill thereon," but the intention had changed before the completion of the building, for it was, from the first, used as a worsted mill.

† Hareholme Mill, in Rossendale, may be also classed among the earliest worsted mills. It was built about the same time as that at Mytholmroyd. Hand Carr Mill, near Luddenden Foot, stands in the same list. Lob Mill, in Hansfield, is stated to have been built before either.

‡ A circumstance, alike creditable to both parties concerned, is worthy of record, respecting this old and faithful overlooker.—His master, William Garnett, Esq., one day went to him, and said, "Well John, I think you have worked long enough, and if you wish to retire I will make a suitable provision for you." Although hale and competent, this was an offer not to be rejected, and the worthy man enjoys a kindly old age, respected by all, an example of what sobriety, industry, and good conduct produce. It may be said to masters and servants,—Go and do likewise!



employed in the work ten or a dozen hands. There were three men regularly at work, the remainder being women. The machines, were turned by hand. Old Mr. Garnett commenced spinning with them in the Paper Hall, about sixty years ago." There has been some dispute whether these machines were jennies or mules, but the evidence of a person who assisted in turning them is conclusive. He states that they were called mules, and is corroborated by another person who often saw them at work. There were, it is stated, at first only two machines: a drawing machine, and one for spinning the thread. Since about 1794, when Mr. James Garnett, in an ancient mansion in High Street, began the spinning of worsted by machinery, he, his sons, and present grandson, have carried it on in the same street, thus proving the claim of the family of Garnett to rank among the longest established of worsted spinners by machinery, as well as among the largest. About the year 1800, the first worsted mill in Bradford reared its head in the Holme, amid a strong feeling of opposition by the inhabitants to the introduction of the factory system, little aware that it was destined to raise Bradford from a mere village to rank among the first towns of the empire; to give affluence to themselves and their children; the comforts of life to hundreds of thousands of operatives; and add millions sterling to the resources of the nation.

Wages during the latter part of the century ranged upon a low scale. In Yorkshire, woolcombers, in 1780, obtained about twelve shillings a week for a full week's work, which was rarely performed. Women spinners earned on an average from 1780 to 1800, two shillings a week; girls from fifteen-pence to eighteen-pence a week. In 1780, a good weaver would gain ten shillings a week, but afterwards wages fell. A better notion of the state of wages for weaving in the neighbourhood of Bradford, from 1790 to 1800, will be gathered from the following narrative of a Bradford manufacturer than from any general statement. "My father was a weaver of ribbed calimancoes, and was a first-rate hand. He could earn, by extraordinary exertions, ten shillings a week. I have known him weave two calimanco pieces, but to accomplish

that he had to work over hours one whole night, say Friday night. He obtained five shillings for weaving each piece. I remember an anecdote respecting wages sixty-five or seventy years since. A number of weavers were drinking at Clayton Heights, and a weaver named Hartley got up and offered to bet a tankard of ale that he could say what no other person in the company could, namely, that he had woven a five shilling piece a week, for twelve months.”\* It seems conclusive that in Yorkshire the average wages of weavers were, at this time, at a very low rate.

It is very hazardous to form any opinion as to the value of the worsted manufacture towards the end of the eighteenth century. During the previous thirty years, and particularly since the commencement of the war, there had been an increase in the Yorkshire woollen manufacture arising mainly from two causes; the decline of woven manufactures upon the Continent from the disturbing influence of the wars, thereby augmenting the demand for English cloth; and the vast armies that had to be clothed, for which Yorkshire goods were peculiarly fitted. This is clear from the manufacturers’ evidence, given before a Committee of the House of Commons in 1800. It is manifest from the same evidence, that the worsted manufacture was not in the West-Riding upon a larger scale in 1799 than in 1772. In both years they are stated to be of the amount of £1,400,000 a year. That of Norwich is set down by Mr. Taylor at £800,000. Then there are to be added the worsted goods of Exeter and other portions of England. It would, it seems, only mislead the reader to attempt to form any sufficiently accurate conception of the value of the worsted manufacture in England, as there is extant no data upon which to build a conclusion. True the combing wool grown in this country amounted to upwards of 131,000 packs, and if a fifth be deducted for ‘shorts’ sorted out for the cloth trade, upwards of 100,000 packs would remain, which at £10 a pack amounts to £1,000,000, and if multiplied by five, (and profits were high,) would give £5,000,000 as the value of the

\* Mr. John Milner, of Bradford, Manufacturer.

worsted trade. But this would be fallacious reasoning at that period, for large indeterminate quantities of this combing wool were cut up for the clothier, and no reliable approximation can therefore be come to on the subject. The total official value of woollens exported, in 1799, had increased to nearly £7,000,000, but in this increase the worsted manufacturers did not participate, for the very large quantities of stuffs, which previous to the declaration of the war, we sent to Holland, Flanders, and Spain, had sunk to nothing. There still remained to us as good customers for our worsteds, the United States of America; the British Continental Colonies in America, and our West-India Islands; Germany, Portugal, the East-Indies, and China.

Altogether, however, the worsted manufacture, at the end of the century, was far from being in a flourishing state. But with the introduction of spinning machinery into the worsted trade, quite a new era commenced, which altogether transformed its aspect. Without a narrative and description of the inventions which constitute, in the aggregate, the factory system, this work would be incomplete, and the subject will therefore be treated in the next chapter.



## CHAPTER IX.\*

## THE AGE OF INVENTIONS APPLICABLE TO THE WORSTED MANUFACTURE.

Preliminary Observations.—Great Value of these Inventions.—The Distaff, the One-Thread Wheel, and the Saxon Wheel.—Dereham and Haines' Spinning Machine.—John Wyatt the first applier of the Method of Spinning by Rollers, in 1738.—A Description of his Apparatus.—Not practically successful.—Highs' Claim as the Reviver or Inventor of a similar Apparatus.—Sketch of the Character of Sir Richard Arkwright, and of the steps whereby he completed his Water-Frame.—Copy of the Specification in his first Patent.—The distinctive features of his Spinning-Frame.—Improvements constituting the 'Throstle.'—An Attempt to ascertain Arkwright's exact position as an Inventor.—Account of Hargreaves' Spinning Jenny, and of Crompton's 'Mule.'—The gradations by which the Steam Engine was brought into practical use.—Improvements of Watt, and his adaptation of Steam to working Factories.—Narrative of early Attempts to invent Automatic Looms.—Cartwright's Power-Loom.—Imperfections.—Improvements made upon it.

IN tracing the progress of the stuff manufacture in England, an era has now been approached whence effects of the most astounding character in connexion with the production of clothing, have arisen. For thousands of years, the hand of man had directly fashioned the materials of his apparel, but

\* For the facts contained in this chapter the author is principally indebted to 'Baines' History of the Cotton Manufacture;' 'Guest's History of the Cotton Manufacture;' the article 'Cotton Manufacture,' in the *Encyclopædia Britannica*, written by Mr. Bannatyne; 'Aikin's History of Manchester;' 'Kennedy on the Rise and Progress of the Cotton Manufacture' printed in the *Memoirs of the Manchester Literary and Philosophical Society*, in 1819; and two Lectures, delivered by Mr. Benjamin Fothergill, in the *Lecture Theatre of the Manchester Mechanics' Institution*, 'On the Patents for Preparing and Spinning Fibrous Materials,' printed in the *Manchester Guardian*, of May 4th and 11th, 1853.

now by a wonderful combination of automatic machines, which obey, like willing slaves, the will of the master mind, a power of production so infinite and various, so prodigious in its operations and results, as to surpass the fabled power of the ancient Genii, or the marvels of Arabian story, has been obtained. The hundred hands of Briareus are not to be compared to the thousands of spinning fingers and weaving arms set in motion by the giant steam-engine. The marvellous body of machinery forming the internal economy of a worsted factory in all its branches, is one of the most surprising and interesting spectacles that the eye of man can survey, and presents a forcible example of the subjugation of brute matter to the mind and dominion of man, as effected by science and mechanism. This grand instrument of labour—the factory system—nay, not merely an instrument, but containing within itself powers for its own direction—the joint result of the genius, skill, and perseverance of Arkwright, Watt, Cartwright, and a host of others, who almost simultaneously sprung up to contribute, as by one magic influence, to its perfection, unlike some of the inutile creations of the moderns, comes home to the first necessities of life, and supplies in abundance, and at little cost, beautiful and durable materials of apparel for all the civilized nations of the earth.

To England alone, the whole world is indebted for these inventions, and as her just reward, she has reaped, beyond all comparison, the largest share of the golden results which have flowed from them. During her tremendous wars with Napoleon, she was thereby mainly enabled to sustain the conflict, at one time almost single handed, against his vast array. British industry, especially in textile manufactures, gave us the means of unlimited wealth, which British valour gloriously defended. The national burdens which that struggle imposed upon us have also been borne with ease, by the energy and wealth arising from England's great staple manufactures. To our resources and powers of production, the factory system has added more than millions of population could, assisted by all the means of subsistence, whereas that servant of nations, the steam engine, requires little support or attention.

The distaff and spindle of the ancients, described in the early portion of this work, were originally the only instruments employed for converting wool into yarn. When the one-thread wheel, (a very great improvement on the distaff and spindle,) was brought into use here, remains in obscurity. It is evident on comparison, that it and the rude teak wheel of Hindostan had a common origin. At the commencement of the eighteenth century, three instruments were used for spinning every description of material. First: the *Rock*, as the ancient distaff and spindle were termed in England. In the preceding pages, allusion has been made to the celebrity of the Rock spinners of Norfolk, who, in the times of the Tudors and long after, maintained the far spread fame of Norwich stuffs for fineness of make. Until of late years, the Rock was still employed in Norfolk and other parts of England for spinning worsted, and may probably yet be met with in very remote districts. These Rock spinners drew out the thread from the end of a sliver of combed wool, and communicated the necessary motion to a rough kind of spindle by twirling it between the right hand and the thigh, allowing the spindle to revolve when suspended by the thread which the spinster gradually lengthened with her fingers. No just conception can now be formed of the delicate quality of the yarn produced by this primitive process. It would, no doubt, be exceedingly tedious, and the quantity produced small, but where so much depended on the skill and delicacy of manipulation acquired by the spinner, long and incessant practice would overcome the difficulties arising from the rudeness of the implement. There is something very suggestive in this fact that although the Hindoos use for coarse descriptions of cotton yarn a one-thread wheel, yet for the finer sorts the spindle, sometimes with, and sometimes without a distaff, is employed, and thus full play is given to the manual delicacy of touch of the Hindoo women. Second: the *common One-thread wheel*, which up to the end of the eighteenth century was ordinarily used in spinning wool. This apparatus was in truth neither more nor less than the loose spindle above-mentioned mounted in a frame, and driven or turned by a belt passing over a large wheel or rim. Thus the spinner's



hands were left freer than by the former method, to draw out the thread. The main advantage of the one-thread wheel evidently arose from its capability of producing a larger quantity of yarn. Spinning by this rude implement (still to be seen in very many farm houses in the north of England,) is thus described:—"The operator, usually a female, laid hold of the wool with the finger and thumb of the left hand at a few inches distance from the spindle, and drew it towards her while she turned the wheel with the right hand. She then extended and twisted repeated portions, and as they were twisted she, guiding with her hand the thread, wound it upon the spindle." But in the worsted business there was a peculiarity in yarn spun by this wheel which gave it a great advantage over mill spun yarn, namely, the thread was spun from the middle portion of the sliver, thus drawing the wool out even and fine. The best spinners would, on this wheel, spin fine qualities of wool to as high counts as fifties, that is where there required fifty hanks, each five hundred and sixty yards in length, to a pound of yarn. Third: Another spinning machine was also in use at the commencement of the eighteenth century, and received the name of the *small* or *Saxon wheel*. Though a more perfect apparatus than that last-mentioned, yet except in particular instances, it could only be applied to the spinning of flax. It requires here, however, a brief notice because in it lay one of the germs of Arkwright's machine, namely, the construction of the spindle, which in the Saxon wheel had on it a bobbin on which the thread was wound, and a flyer revolving with greater rapidity than the bobbin to give the thread twist. This wheel being very small received its motion from a treadle, and spinning by it formed the favorite occupation of the lady spinsters of Britain during the seventeenth and eighteenth centuries.

So wonderful are the contrivances and ingenuity exhibited in even these comparatively rude instruments, and also in the ordinary loom of this period, that an old author well observed—"He that considers the wheel, the wherve, the spindle, and other tacklings and accoutrements that belong to spinning, with the fabric of the loom and shuttle and other

instruments of weaving, will confess that it was no vulgar wit that devised and framed them.”\* How much more justly the observation may be applied to those men who ‘devised and framed’ the extraordinary instruments presently to be described; theirs indeed was no ‘vulgar wit.’

Previous to the eighteenth century, it appears from Mr. Woodcroft’s valuable Index to Inventions, just published, that an attempt had been made to spin by a process making some approach to the apparatus of modern times. In the year 1678, Richard Dereham and Richard Haines, obtained a patent for a “spinning machine whereby from six to one hundred spinners, and upwards, may be employed by the strength of one or two persons to spin linen and *worsted* thread, with such ease and advantage, that a child three or four years of age may do as much as a child of seven or eight years old, and others as much in two days as without this invention they can in three days.” Unfortunately nothing is known of this machine beyond what is conveyed in the above meagre description, for on application to Mr. Woodcroft, at the Patent Office, he very courteously made a search, and regretted both for the sake of general history and of this work, that not a vestige of the specification, beyond that contained in the index, existed. It may be gathered that Dereham and Haines’ contrivance only shortened labour by about half; but what is more important, its mode of working leads one straight to the conclusion that it must at least have contained the embryo principle of either Hargreaves’ or Arkwright’s machine.

Having now by these preliminary facts and remarks prepared the way, it remains to give a succinct history of the inventions applicable to the subject of this work, and which peculiarly distinguish the eighteenth century.

Like the origin of every great invention, that of spinning fibrous substances by means of rollers, (the principle of the modern spinning frame,) is involved in considerable doubt. This arises, in the main, from the numerous gradations by

\* “Humane Industry, or History of the Manual Arts.” London, 1661,—a curious and rare book.

which the machine was brought to something like maturity. There are three grand competitors for the honour of the invention. Until the publication of Mr. Baines' luminous and comprehensive History of the Cotton Manufacture, it was generally understood that the process of spinning by rollers, either originated in the mind of Sir Richard Arkwright, or a person named Highs; but Mr. Baines has clearly proved that John Wyatt had, at least thirty years before, discovered the principle, and to some extent carried it out in a rude machine, patented in 1738. A letter, published by Wyatt's son, in the 'Repertory of Arts, Manufactures, and Agriculture,' for January, 1818, relates, that his father, in the year 1730 or thereabouts, residing at a village near Lichfield, conceived the project of spinning by rollers, and in the year 1733 prepared a model of about two feet square, which he set up in a room at Sutton Coldfield, and spun thread with it. In this model the material was 'passed between two cylinders, whence the bobbin drew it by means of the twist.' Here in truth we have the grand principle of the water-frame and throstle, and every adaptation of them.

Wyatt's means being inadequate to carry out successfully the experiment, he sought for a monied partner to aid him, and unfortunately was imposed upon, by one Lewis Paul, a foreigner, 'who made offers and bargains which he never fulfilled;' and finally, as Wyatt's partner, contrived to obtain in his own name a patent for the invention. The letters patent granted to Paul, described of Birmingham, are dated 24th day of June, 1738. Underneath is presented a copy of the specification, which is more than ordinarily obscure in its language.

The said machine, engine, or invention, will spin wool or cotton into thread, yarn, or worsted, which before it is placed therein, must be first prepared in manner following, (to wit) all those sorts of wool or cotton which it is necessary to card, must have each card-full, batt, or roll, joined together, so as to make the mass become a kind of a rope or thread of raw wool. In that sort of wool which it is necessary to comb, commonly called jarsey, a strict regard must be had to make the slivers of an equal thickness from end to end. The wool or cotton being thus prepared, one end of the mass, rope, thread, or sliver, is put betwixt a pair of rowlers, cillinders, or cones, or some such movements, which being twined round by their motion, draws in the raw mass of wool or cotton to be spun, in proportion



to the velocity given to such rowlers, cillinders, or cones: as the prepared mass passes regularly through or betwixt these rowlers, cillinders, or cones, a succession of other rowlers, cillinders, or cones, moving proportionably faster than the first, draw the rope, thread, or sliver, into any degree of fineness which may be required; sometimes these successive rollers, cillinders, or cones, (but not the first,) have another rotation besides that which diminishes the thread, yarn, or worsted, viz: that they give it a small degree of twist betwixt each pair, by means of the thread itself passing through the axis and centre of that rotation. In some other cases only the first pair of rowlers, cillinders, or cones, are used, and then the hobbyn, spole, or quill, upon which the thread, yarn, or worsted, is spun, is so contrived as to draw faster than the first rowlers, cillinders, or cones, give and in such proportion as the first mass, rope, or sliver, is proposed to be diminished.\*

Here is contained the germ of a self-acting, self-regulating machine, and upon a careful comparison with Arkwright's, the specification will give the reader a tolerably distinct notion of the details of this rude yet valuable apparatus, and indubitably prove, that in the main essentials of the invention, Arkwright's more perfected machine is the same;† for here in Wyatt's there is the succession of rollers drawing out the fibres; then the rollers being made to revolve at different speed; and thirdly, a similar process for giving the twist, and winding the yarn on the spindle. Thus the grand or fundamental principles upon which all modern spinning machinery is based, or by which its construction is determined—the elongation and drawing-out with evenness and precision the fibres, and giving them a uniform twist and strength,—are comprised in Wyatt's invention.

Wyatt's machine first, in 1741, essayed its powers at Birmingham, where it was turned by a gin, worked by a couple of asses, and attended by ten girls. Owing to the poverty of the partners, the concern, after a short trial, was

\* In this specification we observe, that there are two sets of operations performed; one, whereby the sliver passing through rollers revolving at different speed, was drawn out to the requisite degree of fineness, and partly twisted; the other consisted of a double operation, namely, the drawing which took place between the nip of the rollers and the nose of the spool, and the twist which the thread received from the spindle. Wyatt's claim to be first inventor of the method of spinning by rollers is now generally acknowledged, and that Arkwright's water-frame is the same in principle.

† In the drawing accompanying Paul's patent in 1758, it is shewn that the rollers, spindle, and bobbin were very similar to those in Arkwright's machine.

closed.\* A larger manufactory, moved by water-power, opened at Northampton, by Mr. Cave the proprietor of the Gentleman's Magazine, long survived it. The establishment consisted of several frames bearing two hundred and fifty spindles and bobbins, the bobbin revolving upon the spindle, and each being moved by a separate wheel and pinion.

This factory appears to have been carried on up to the year 1764, but it is evident that it turned out, chiefly from mismanagement, an unprofitable adventure. Mr. Wyatt's son, in his contribution to the Repertory of Arts alluded to above, hints that the machinery afterwards got into the hands of Arkwright. Little is known of Paul's subsequent career, except that in the year 1758, he took out a patent for some improvements in the spinning machine, which it is believed consisted of a better mode of applying the sliver to the rollers.

Wyatt suffered the fate of most inventors, whose history shows how rarely the fruits of their genius have been reaped by themselves. On the failure at Birmingham, he became a prisoner for debt, and died in comparatively indigent circumstances.

Having established a prior claim for Wyatt to the honour of first spinning by rollers, great difficulty occurs in determining what person, after his invention had lain dormant or buried in obscurity, rescued it from oblivion and perfected its details so as to approximate it more closely to the machinery of the present day.† Besides Arkwright there is another claimant, Thomas Highs a reed-maker of Leigh, and it has

\* If we may take literally the words of a poet as the fact it is evident, that Paul's machine for spinning had been employed in spinning wool in a factory in the vale of Calder, near Halifax, soon after the machine was patented. Dyer, in his 'Fleece,' published in 1757, minutely describes this factory, alludes to spinning being performed therein by means of a "circular machine of new design, in conic shape," which drew and spun a thread without the tedious toil of needless hands. He mentions, that an invisible wheel beneath the floor gave the necessary motion, and adds in a note "a most curious machine invented by Mr. Paul."

† In 1754, James Taylor, of Ashton-under-Lyne, obtained a patent, the specification of which stated it to be for "an Engine, to be worked either by men or horses, wind or water, for Spinning Cotton Wool into Yarn, which will spin more and better Cotton Yarn," but what this invention consisted of is not known.



been, by some eminent writers contended, that to him we are indebted for the beautiful machine called the water-frame, attributed to his more fortunate rival. In support of this claim there is first the evidence of Highs himself:—on the occasion of the great trial which took place in the year 1785, to try the validity of Arkwright's patent, Highs was examined as a witness, and stated that he himself made rollers for the purpose of spinning cotton in 1767; in his machine there were two pairs of rollers, the second revolving five times as fast as the first for the purpose of drawing the threads finer; it was used, he asserted, both to rove and spin, and at first he only made use of two spindles. He explained that he did not follow out his invention, simply for want of pecuniary means, but contemplated keeping it secret until he was enabled to do so by providing assistance; and that he communicated the principle of his invention to one Kay, a clockmaker, whose services he required to make him a small model of the machine with brass wheels. He also added, that having once met Arkwright at Manchester, after the latter had taken out the patent for the water-frame, he reproached him for having made an unfair use of his invention, which Arkwright did not deny. Kay likewise affirmed in court, and was corroborated by his wife, that he made the wheels and rollers for Highs in 1767;\* that in the same year, or early in the following year, he communicated the plan to Arkwright, who was then a poor man, and at whose request he made him two models. In addition to this testimony we are credibly informed, that in the latter part of the eighteenth century, when the facts were notorious, public opinion in Lancashire universally adjudged that Arkwright derived his

\* Highs' claim to the prior invention is set out at length and supported in Aikin's History of Manchester, and Guest's History of the Cotton Manufacture. The latter gentleman devoted much time to the investigation of the subject. The objections to Highs' claim are founded on these facts, that he did not take out a patent for his machine, nor indeed completed his apparatus until after the date of Arkwright's patent, and that Kay having quarrelled with Arkwright his evidence is liable to suspicion. But few things are, however, more certain, than that long before Arkwright took out his patent, Highs was engaged in constructing a machine to spin by rollers.



invention from Highs. Even the strongest supporters of the pretensions of the former do not deny that he employed Kay to make him his 'frame', and that the latter had been previously employed in constructing models of spinning machines.

It seems indeed sufficiently clear, that by some means or other, Highs had obtained a knowledge or hint of the peculiar construction of Wyatt's rude apparatus; that he had developed his plan to Kay the clockmaker, who informed Arkwright of the circumstance, and explained to him the principles or form of the machine.

Thus two steps in the progress of this invention have been obtained. The third and most important one, and to which indeed may be attributed the sole or primary cause of that mighty and remarkable revolution in the textile manufactures, namely, the carrying out in detail, and with very many invaluable improvements, the grand principle of construction first adapted by Wyatt, improved by Highs, and, in many respects, perfected by Arkwright.

Without assigning to the latter any great rank as an inventive genius, and with every drawback that may be reasonably urged from the foregoing facts, Richard Arkwright was indeed one of the most remarkable men that any age or country ever produced. Born and reared in the humblest condition of life, surrounded even beyond the prime of manhood by all the privations of poverty, and with little or no education to cultivate his inborn faculties, he, by means of unrivalled sagacity and indomitable perseverance, arranged and almost carried to perfection, the plans of his (in some respects) equally praiseworthy predecessors; and without his aid, it may be unhesitatingly stated, that for a long time the manufacturing prosperity of the nation would have been retarded, nay more, rendered uncertain, perhaps impossible. He alone originated our factory system. So vast has been the inventive genius displayed in this country, since his day, that it cannot of a truth be doubted that ere this the method he developed would have been applied by some master mind; but who can tell when such an event would have occurred, or

whether the golden opportunity for this country might not before that time have passed away.

In the year 1767, Arkwright who had a strong inclination for mechanical experiments, and at that time the scheme of perpetual motion being a prominent object of scientific hallucination, engaged in the pursuit with all the natural ardour of his constitution. To give effect to his contrivances, he employed Kay, already alluded to, who from his business was an expert mechanist in the more delicate operations of the constructive arts, to assist him. During these joint labours, Kay, according to his own account, and with every appearance of truth, imparted to Arkwright a knowledge of Highs' model; and that in consequence Arkwright induced him to prepare a counterpart. However this may be, it is nevertheless certain, that from that period, 'the Preston barber' abandoned all his other pursuits, and devoted his whole time and energies to the production of the spinning machine. Having by his intense and persevering application to this and his other speculative pursuits, become reduced in circumstances, he applied to Mr. John Smalley, a spirit merchant at Preston, to render him pecuniary assistance to enable him to perfect his plan. As an instance of the poverty of the future millionaire, Arkwright, it is related, that in the famous contested election, which occurred at Preston, in the year 1768, he being a freeman, and required to record his vote, had to borrow a decent suit of clothes to appear at the polling booth, in such a tattered condition at the time was the future knight. Mr. Smalley, however joined him in his undertaking, and the first of Arkwright's spinning machines, was set up in the parlour of the house adjoining the Grammar School in the same town.

Having thus made his apparatus practicable, and removed any imperfections which had become apparent during the process of construction, he took out a patent in the year 1769. In his specification he stated that he had by great study and long application, invented a new piece of machinery never before found out, practised, or used, for the making of weft or yarn from cotton, flax, or wool, which

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Fig. 1.

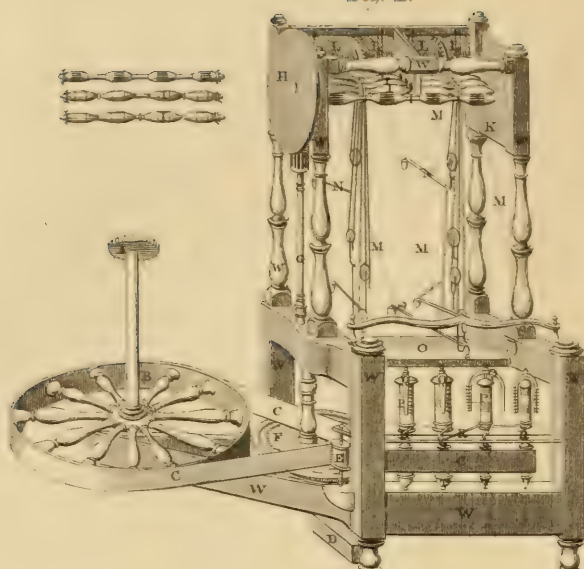


Fig. 2.

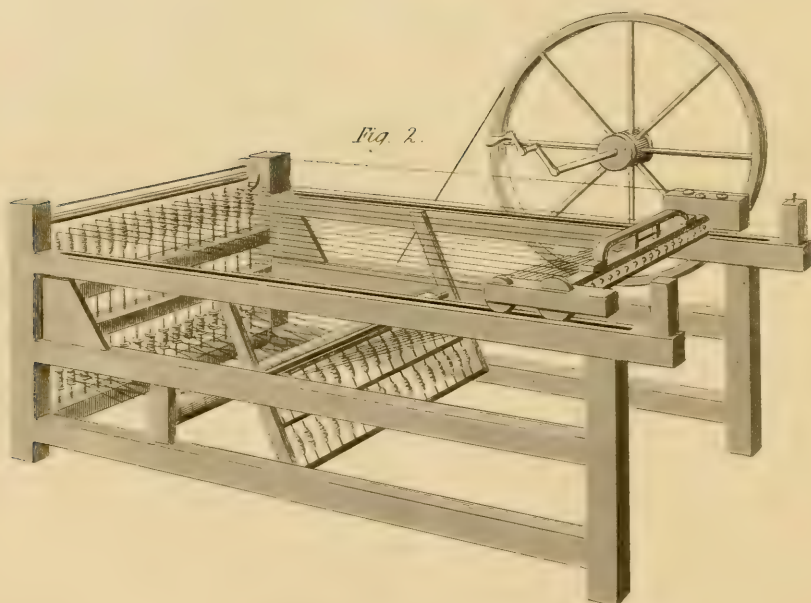
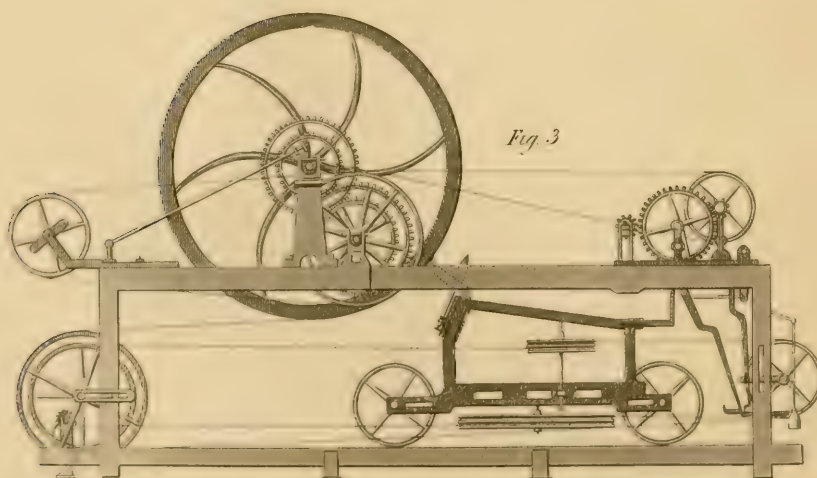


Fig. 3.



would be of great utility to a great many manufacturers as well as to his Majesty's subjects in general, by employing a great number of poor people in working the said machinery, and by making the said weft or yarn much superior in quality to any heretofore manufactured or made. The following is a copy of the specification to which allusion is made.

"Now know ye, that I, the said Richard Arkwright, do hereby describe and ascertain the nature of my said invention, and declare that the plan thereof drawn in the margin of these presents is composed of the following particulars, (that is to say) A, the cogg wheel and shaft, which receive their motion from a horse. B, the drum or wheel which turns C a belt of leather, and gives motion to the whole machine. D, a lead weight, which keeps F, the small drum, steady to E, the forcing wheel. G, the shaft of wood which gives motion to the wheel H, and continues it to I, four pair of rollers (the form of which are drawn in the margin) which act by tooth and pinion made of brass and steel nuts fixt in two iron plates K. That part of the roller which the cotton runs through is covered with wood, the top roller with leather, and the bottom one fluted, which lets the cotton, &c., through it, by one pair of rollers moving quicker than the other, draws it finer for twisting, which is performed by the spindles, T. K, the two iron plates described above. L, four large bobbins with cotton rovings on, conducted between rollers at the back. M, the four threads carried to the bobbins and spindles by four small wires fixt across the frame in the slip of wood, V. N, iron levers with small lead weights hanging to the rollers by pulleys, which keep the rollers close to each other. O, a cross piece of wood to which the levers are fixed. P, the bobbins and spindles. Q, flyers made of wood with small wires on the side which lead the thread to the bobbins. R, small worsted bands put about the whirl of the bobbins, the screwing of which tight or easy, causes the bobbins to wind up the thread faster or slower. S, the four whirls of the spindles. T, the four spindles, which run in iron plates. V, explained in letter M. W, a wooden frame of the whole machine."

With the completion of Arkwright's spinning machine commences a new epoch in the manufacturing history of this country. It occasioned a complete change in the old mode of manufacture, and rendered business transactions of a magnitude and celerity never before contemplated.

Above we see distinctly the principle and details of Arkwright's machine, to which he gave the name of the water-twist frame, because it was subsequently driven by water. It will be observed there are four pairs of rollers, the bottom ones fluted and the others covered with leather, and that one pair of rollers moving quicker than the others elongated the roving to the requisite fineness before it was twisted by the

spindle. It was originally used to reduce rovings into yarn, but afterwards by the same process rovings were made. Before his death, he very considerably improved his machine, and multiplied the number of spindles.\* It also speedily received great improvements from others:† that which has been the most permanent consists of the 'throstle frame,' (so called from its singing sound) which for the last fifty years has been in general use. In it the mechanical spinning fingers, so to speak, are essentially the same as Arkwright's, of which indeed it is a mere modification, but the mode of communicating motion to the mill gearing is somewhat different. Instead of four or six spindles being coupled together, and forming what is called a 'head,' with a separate movement by the pulley and drum, as is the case in the water-twist frame, in the throstle the machine is double, possessing upon each side of its frame a row of spindles with all their subsidiary parts, and the whole of the rollers and spindles on both sides of the throstle are connected together, and turned by bands from a tin cylinder lying horizontally under the machine. The merit of the 'throstle' lies in the simplification of the moving parts. To Arkwright is due the adaptation of the drawing and roving frames, which form such important preliminary processes in the spinning of yarn. These frames are, however, merely modifications of the water frame principle, and therefore do not require any lengthened notice here, especially as in a subsequent part of this work these processes, in their improved forms, will be fully described.

It has often with great warmth been contended that Arkwright solely originated the plan of spinning by rollers, and neither obtained from Wyatt nor Highs any previous

\* In Arkwright's first patent, taken out in the year 1769, the spindles were a considerable distance from the rollers, and there was no traverse or lifting motion for the bobbin. In his second patent, obtained in 1775, he introduced the under-clearer, and a contrivance for stopping one spindle without affecting the others, and a means of giving a traverse motion to the bobbins. There was also the principle of spinning by horizontal bobbin.

† In 1797, a person named Passiman, obtained a patent for driving the spindles of throstles by friction.



hint, but that to his own sagacity alone we owe one of the most valuable inventions of any age or country. Nothing but the most certain and positive evidence would sustain such a position. For many years and up to a short period of the date of Arkwright's patent, there was a considerable manufactory at York, filled with Wyatt's machines, and the yarn produced therefrom exhibited for sale in many places of the kingdom. The machine being well-known to many eminent men, for instance, the late Mr. Boulton, of Birmingham, no doubt allusion would be made to it in some of the publications of the day. Those who refuse to believe that Highs or Arkwright obtained from Wyatt's invention their first notions of the process, whereby rollers were made to do the work of human fingers, are among the most incredulous of human beings, and accept for their theory the greatest improbability, instead of that which carries with it every mark of probability. The truth is, he did not discover or first apply the principles of the spinning frame; but with wonderful sagacity adapted the discoveries and inventions of others, and thus solved the problem of practical successful automatic spinning.

Nearly contemporaneous with the invention of Arkwright, James Hargreaves, a Lancashire weaver, invented the spinning jenny, which, although inferior in the universality of its application to Arkwright's machine, yet exercised some influence on the worsted as well as the cotton manufacture. Hargreaves is said to have received the original idea of his machine from having accidentally overturned a one-thread wheel into an horizontal position, and the wheel and spindle continuing to revolve, the thought instantaneously struck him that by placing a number of upright spindles side by side several threads might be spun at once. In accordance with this idea, he constructed an apparatus in which he put eight rovings in a row, and opposite eight spindles, "the rovings being joined to the spindles passed between two horizontal bars of wood forming a clasp, which opened and shut somewhat like a parallel ruler: when pressed together this clasp held the thread fast. A certain portion of roving being ex-

tended from the spindles to the wooden clasp, the clasp was closed and drawn along the horizontal frame to a considerable distance from the spindles, by which the threads were lengthened out and reduced to the proper tenuity. This was done with the spinner's left hand, his right hand at the same time turned the wheel, which caused the spindles to revolve rapidly, and thus the roving was spun into yarn. By returning the clasp to its first situation and letting down a presser of wire, the yarn was wound upon the spindle."

Another spinning apparatus termed the mule-jenny, from its combining Arkwright's drawing roller with Hargreaves' jenny, owes its birth, in 1780, to Samuel Crompton, a weaver residing near Bolton. His beautiful but complex machine was early applied to worsted spinning, and after being disused for a long period, is now (1855) to some extent employed in spinning fine and peculiar qualities of yarn. It seems destined to become a very important agent in spinning worsted, and to take in this country that high rank to which it is entitled, but which singularly enough, from one cause or another, it has been excluded. Crompton, a very ingenious and worthy man, began to make his machine in 1774 or 1775, and completed it in 1779. He first aimed at merely providing yarn for the requirements of his own family, and endeavoured to keep his 'mule' secret to prevent the public indignation, which then ran high respecting these kinds of machines, being directed against him. But the superior quality of the yarn produced by him excited the attention of his neighbours, and the construction of his apparatus became known. He took no steps to secure by patent the right to his own use, and the mule became the property of the public.

Crompton's machine contained two distinct parts; one, consisting of a system of drawing rollers fixed in a stationary frame, to reduce the roving previous to its being spun; the other, of a moveable carriage furnished with twenty or thirty spindles to further draw out and then twist the yarn. The rovings being passed through the rollers and attached to the spindles, the machine was then set in motion; the rollers

elongated the rovings, and the moveable carriage receding from the rollers continued to draw it out, adding at the same time a slight twist. When a sufficient quantity had been given out, the rollers by a contrivance were at once stopped, and they then acted the part of the clasp of the jenny, holding the rovings whilst the carriage still receded from the rollers, but at a much less speed, the velocity of the spindles was increased to nearly double, thus drawing out and twisting the thread in the most gentle and equal manner. It will be readily observed, that there were two distinguishing features in the mule, the spindles in the *moveable carriage*, and their receding from the clasp or holder of the roving instead of the clasp, as in Hargreaves' jenny, receding from the spindles. The advantages arising from Crompton's invention, were a finer and even yarn than could be produced by either the water-frame or jenny alone.

The mule was, as it came from the hands of Crompton, a clumsy wooden machine, which might be expected from his inexperience in the use of tools. It was, however, soon after being made public, much improved by many ingenious men, and rendered capable of working with several hundred spindles. That improvement, however, which exceeded all others relating to this machine, namely, the wonderful contrivance of the self-acting mule, is not due to the eighteenth century, but belongs to the succeeding one. The mule, because of its adaptation for spinning the finer qualities of yarn, was, as before hinted, early applied to the worsted manufacture, but eventually superseded by the throstle. It has long been largely used by the French in spinning worsted, and unquestionably the excelling qualities of some of their stuffs are attributable to this cause. To me it is astonishing that the improved mule, so admirably adapted for producing the finer sorts of worsteds, should have been so neglected in this country, even with the example of our nearest neighbours the French before our eyes, and continually hearing the beauty and fineness of their stuffs praised.

But all these astonishing inventions would have failed to give full scope and development to the textile manufactures



of Great Britain, had not the application of steam as a motive power in factories, been opportunely made. It is evident that water power must in its very nature be very limited, and without the steam engine, our manufactures would have been scattered or spread over an extensive tract of country, and thus have lost the advantages of the easy intercourse and general enterprise which exist in flourishing towns—the seats of manufacturing industry. Besides in summer, and especially in extraordinary dry seasons, a great loss of productive power would have arisen, necessarily involving much personal loss, as well as operating injuriously to the national interests. Without entering minutely into the question, as to who was the first to suggest, or apply steam as a mechanical agency,\* no doubt remains that the first person who constructed a steam engine applicable to practical purposes, was Thomas Savery, a superintendent of Cornish mines, who obtained a patent in the year 1698, for raising water in mines, by means of steam; this engine was vastly improved by Thomas Newcomen, an ironmonger at Dartmouth, who in conjunction with Savery, took out a patent for a new engine, in 1705. After this, no considerable improvements were made in Newcomen's contrivance, in many respects a very defective one, until the wonderfully fertile and inventive genius of Watt was directed to the subject. Singularly enough he took out his first patent for improvements in the steam engine in the

\* The following particulars relative to the early discoveries in the application of steam as a motive power, are extracted from Lardner's 'Steam Engine explained and illustrated.' A knowledge of the fact, that a mechanical force is produced when water is evaporated by the application of heat, must be considered the first capital step towards the invention of the steam engine. The Ancients knew this fact well, and Hero, of Alexandria, a hundred and twenty years before the Christian era, contrived a machine which was moved by the mechanical force of steam. The first man among the moderns who seems to have effected anything important in the application of steam to machinery, was De Caus, Engineer to Louis XIII, who, when in England in 1612, published a work describing a steam engine. Of all the names, however, which figure in the History of the Steam Engine, the most remarkable is that of the Marquis of Worcester, who, in his *Century of Inventions*, published in 1663, gives a distinct account of the manner of producing motive power from steam. In 1688, Papin, of France, suggested the vacuum system of the present day, which was carried out afterwards by Savery, though he appears to have been ignorant of Papin's engine.

very same year in which Arkwright patented his spinning apparatus. Watt's first engine contained the great features of his inventions. Newcomen's instrument like Savery's consisted of only two parts:—First, the generator of steam or boiler, and its appendages, and Second, the cylinder or applicator, with its appendages. Watt added a third distinct member, namely, the condenser, perfectly separate and independent of the other. This improved engine was at first only applied like Newcomen's, for raising water in mines. Watt's mind seems not to have been directed to the application of steam power for moving mills before 1789. Previously several attempts had been made, without much success, to accomplish this object. He took out his second patent, for (as he terms them) "new methods of applying continued motion to the wheels of mills and other machines" in 1781, and afterwards in 1782 and 1784, obtained two other patents for invaluable improvements in the steam engine. His attempts however to apply steam power to mills did not fully succeed until 1789.

The great inventions of Watt, have been well summed up as being of a threefold character. First, the condensation of steam in a separate vessel, thus increasing the powers of the engine, and giving full effect to them; Second, the part employment of steam pressure instead of the atmospheric, whereby the manufacturer was enabled to increase or diminish the moving power according to his convenience or necessities; Third, the attaching to it a heavy fly wheel and governor, which gave it a double impulse—that of steam and that of matter when put in motion—and admirably regulated, rendered it steady and uniform in its operations.

From many causes, and amongst others the prevalent disinclination to change, with which the manufacturers of those days were proverbially imbued, and the great cost of the engine, a long time elapsed before it became profitable to the patentee, or generally applied to the cotton, much less to the worsted manufacture. In the latter, more especially, this application was exceedingly tardy, and until the commencement of the nineteenth century, its use only reached a

very limited extent. Now, however, it is the grand moving agent in almost every worsted manufactory, and to this adaptation is mainly owing the prosperity which has characterised the recent history of this very important branch of industry. Bradford is particularly indebted to the steam engine for the colossal greatness to which it has in such a short time reached compared with its obscure position only fifty years ago.

Another invention was, however, needed to give full scope to the wonderful powers of these mechanical contrivances for spinning, and this was the power-loom. Although it did not come into operation in the worsted business until many years after the commencement of the nineteenth century, yet as it was invented and applied to weaving before the end of the eighteenth, its history properly obtains a place in this chapter.

Before the invention of Cartwright, immediately to be noticed, the labours of his precursors in the same track must be adverted to so as to arrive at a satisfactory conclusion respecting his claim as the first constructor of the self-acting loom. And here, like Arkwright's case, we find that others had previously invented weaving machines somewhat similar in principle and adaptation to the modern power-loom.

In the scarce old book, before quoted,\* a remarkable passage occurs wherein a very curious automatic loom, weaving four or five pieces at a time, is described. "In Dantzick, in Poland, there was set up a rare invention for weaving of four or five webs at a time without any human help; it was an automaton, or engine that moved of itself, and would work night and day, which invention was suppressed because it would prejudice the poor people of the town, and the artist was made away secretly as 'tis conceived, as Lancellotti, the Italian Abbot, relates out of the mouth of one Mr. Muller, a Polonian, who had seen the device." Here we have sufficient evidence that the idea of the power-loom is not new. It seems that the spirit of invention relating

\* "Humane Industry, or History of the Manual Arts." London, 1661.



to the improvement of weaving apparatus, was fully awakened at this period, for in the year 1678, a Frenchman, named De Gennes, constructed a loom which is described in the Transactions of the Royal Society, and exhibits a remarkable resemblance in the main point to the modern steam power-loom. This is the description:—"The advantages of this machine are these:—1. That one mill alone will set ten or twelve of these looms at work. 2. The cloth may be made of what breadth you please, or at least much broader than any which has been hitherto made. 3. There will be fewer knots in the cloth, since the threads will not break so fast as in other looms, because the shuttle that breaks the greater part can never touch them. In short, the work will be carried on quicker and at less expense, since, instead of several workmen, which are required in making of very large cloths, one boy will serve to tie threads of several looms as fast as they break, and to order the quills in the shuttle." The close resemblance, which in the main points exists, between this machine and the modern power-loom will not escape observation.

From some cause or other, it does not appear that this engine, promising so many advantages, ever came into practical use, or rendered any important service to manufactures. Another loom made by Vauconson, (so well known for his automatic marvels,) and worked by a swivel, came into operation in 1765, in a weaving factory erected in Manchester by a Mr. Gartside, and filled with looms of this description. But the speculation did not succeed, partly, it may be inferred, from each loom requiring a man, whereby little saving was effected, and it was soon disused. Notwithstanding these prior attempts, futile and leading to no practical results, to the Rev. Edmund Cartwright (brother of the celebrated Major Cartwright) must, in truth, be conceded the distinguished merit of originating the present steam power-loom, which has effected a complete revolution in the weaving department, nearly as important a one as Arkwright wrought in the art of spinning. Dr. Cartwright communicated to Mr. Bannatyne, author of the article on the Cotton Manufacture,

in the *Encyclopædia Britannica*, a graphic account of the origin and completion of his useful invention, which we subjoin :—

Happening to be at Matlock in the summer of 1784, I fell in company with some gentlemen of Manchester, when the conversation turned on Arkwright's spinning machinery. One of the company observed that as soon as Arkwright's patent expired, so many mills would be erected, and so much cotton spun, that hands never could be found to weave it. To this observation I replied, that Arkwright must then set his wits to work to invent a weaving mill. This brought on a conversation on the subject, in which the Manchester gentlemen unanimously agreed that the thing was impracticable; and in defence of their opinion, they adduced arguments which I certainly was incompetent to answer or even comprehend, being totally ignorant of the subject, having never at that time seen a person weave. I controverted, however, the impracticability of the thing, by remarking, that there had lately been exhibited in London an automaton figure which played at chess. Now, you will not assert, gentlemen, said I, that it is more difficult to construct a machine that shall weave, than one which shall make all the variety of moves which are required in that complicated game.

“Some little time afterwards, a particular circumstance recalling this conversation to my mind, it struck me that, as in plain weaving, according to the conception I then had of the business, there could only be three movements, which were to follow each other in succession, there would be little difficulty in producing and repeating them. Full of these ideas, I immediately employed a carpenter and smith to carry them into effect. As soon as the machine was finished I got a weaver to put in the warp, which was of such materials as sail-cloth is usually made of. To my great delight, a piece of cloth, such as it was, was the produce. As I had never before turned my thoughts to anything mechanical, either in theory or practice, nor had ever seen a loom at work, or knew anything of its construction, you will readily suppose that my first loom was a most rude piece of machinery. The warp was placed perpendicularly, the reed fell with the weight of at least half a hundred weight, and the springs which threw the shuttle were strong enough to have thrown a Congreve rocket. In short, it required the strength of two powerful men to work the machine at a slow rate, and only for a short time. Conceiving, in my simplicity, that I had accomplished all that was required, I then secured what I thought a most valuable property, by a patent dated fourth of April, 1785. This being done, I then condescended to see how other people wove; and you will guess my astonishment, when I compared their easy modes of operations with mine. Availing myself, however, of what I then saw, I made a loom, in its general principles nearly as they are now made. But it was not till the year 1787 that I completed my invention, when I took out my last weaving patent, August first, of that year.”

Many were the imperfections of Cartwright's loom, as will be readily inferred from the above narrative. The chief of these consisted of the rebound of the shuttle from the driver, and its frequent accidental stoppage in the shed, so that the

loom could not effect good work, owing to the weft being so often broken. Hence the failure of a weaving factory which Dr. Cartwright set up at Doncaster. In the year 1790, two gentlemen named Grimshaw, of Manchester, obtained a license from the inventor, and brought into use his power-loom, and although they made many improvements in it, their project did not succeed.

Soon after Cartwright's attention was engaged on the subject, Dr. Jeffray, a physician at Paisley, invented a power-loom, which, like the former one, was so constructed that the shuttle and lathe were worked by the reaction of springs. It had, however, an advantage over Cartwright's as to the means for preventing the breakage of weft, caused by the stoppage of the shuttle, and its rebound from the driver. This Paisley loom received many improvements from a person named Miller, of Dumbartonshire. His improved loom was called the 'wiper,' from the motion of the shuttle being effected by eccentric wheels of that description. He also substituted for the spring in throwing the shuttle, the direct action of the motive power, "the principle on which all power-looms have since been made, but carried further in England by Mr. Horrox, of Stockport, who dispensed with springs altogether in the construction of his power-looms."\*

To the genius of Horrox, engrafted upon that of Cartwright, we mainly owe the small, compact, and simple machine constructed of iron, now in common use, called by him the crank power-loom, from the lathe being worked by that agency.

\* White's Art of Weaving, page 92.



## CHAPTER X.

Development of the Factory System.—Defects of early Mill-spun Yarn.—Invention of the False Reed or Slay.—Application of the Fly Shuttle to Worsted Weaving.—Advantages.—Growth of Bradford.—Number of Pieces exposed for Sale in its Piece Hall.—Union with Ireland opposed by the Worsted Manufacturers.—Large Quantities of Worsted Yarn smuggled abroad.—Valuation of Effects at Dolphin Holme Mill.—Amount of Drawback allowed on Soap used in the West-Riding Worsted Trade, in the Year 1810.—Estimate of the Value of the Manufacture there.—Moreen trade brought to Halifax.—Introduction of Plainbacks by Messrs. Akroyd.—Important bearing on the Worsted Trade.—Quantity and Official Value of Stuffs exported in 1816, distinguishing the Countries whither sent.—Particulars of the Norwich Camblet Trade.—Prices of Wool from 1800 to 1816.—Improvements in Spinning.—Duty imposed on Foreign Wool in 1819.—Scale of Prices fixed for Weaving Stuffs in that Year.—Bombazines and Norwich Crape brought into the Halifax Trade.—Return of Drawback to Worsted Manufacturers in 1820.—Value of West-Riding Stuff Manufacture.—Damasks incorporated among Halifax Productions.—Agitation in Worsted Districts against allowing the Exportation of Wool.—Foreign Stuff Merchants settle in the West-Riding.—Great Strike of Woolcombers.—Scale of Wages.—Merinos introduced by Messrs. Mann.—Introduction of Power-Looms into the Worsted Manufacture.—The Jacquard Loom applied.—The Lords' Committee on Wool.—Evidence.—Mr. Hubbard's Calculation of the Quantity of Wool grown in England in 1828.—His Table of Wool.—Return of Drawback on Soap allowed to the West-Riding Worsted Manufacturers in 1830.—Value of their Productions.—Report of Factory Commissioners.—Factory Regulation Act.—Stuff Trade to India and China.—Mr. Youatt's Estimate of the Quantity of Wool produced in England.

CONTEMPORANEOUS with the commencement of this century, the factory system, one of the main pillars of our wealth and commercial greatness, may be said to have become developed in the worsted department. The old modes of business, tardy and difficult, gave way to the progressive spirit of the times, and henceforward the manufacture assumes, more and more, an automatic character, contra-distinguished from that

of hand labour. Although many worsted mills had risen into existence at this period, (1800,)\* and were in full operation, producing large quantities of yarn, great improvements were still required to make it equally acceptable to the manufacturer as the hand-spun yarn, even with all its defects of broken thread. The mill yarn for a long time continued to be exceedingly rough and hairy, so much so as to render it very difficult to weave. A very forcible example of these difficulties is given by one who experienced them. He relates, that his warps especially, were so hairy, he had recourse to the following expedient, common at the time, to smooth them:—Having to weave ribbed calimancoes, mostly nineteen inches wide, he put whilst winding the warp upon the loom beam, nineteen candles in a row thereunder, so that on the threads of warp passing through the flame, the loose hairs were singed off. Very soon, however, after the opening of the nineteenth century the quality of mill-spun yarn greatly improved, and its superiority over that of the one-thread wheel then became evident. But above all, the invention of a contrivance for facilitating the weaving of mill yarn contributed more than any other cause to bring it rapidly into repute. This was the false reed or slay invented by Michael Greenwood,† of Lined House, in Shibdendale, near Halifax, about the year 1800. Previously it was not uncommon for a weaver to require the services of one of his children to reach him the shuttle, so often was it thrown out of, or stuck in the shed. Greenwood's contrivance, simple but effectual, consisted of a row of strong vertical wires suspended by loops from a horizontal wire fastened at the back of the slay. These vertical wires

\* Among the principal worsted mills of this period, were Dolphin Holme Mill, near Lancaster; Mytholmroyd, near Halifax; Addingham Mill; Hareholme Mill, in Rossendale; Holme Mill, Bradford; Lob's Mill, in Stansfield; Hewnden Mill, near Wilsden; Leeming Mill, Haworth. Mr. Dawson Humble, who resided at Boldshay, near Bradford, had a worsted mill at Doncaster, from which he supplied the Bradford trade. At or about this date there was also a worsted mill at Retford.

† There are other claimants for this invention, but after the best consideration Greenwood's claim seems paramount.

passed through the warp at the distance of about a quarter of an inch, and acted as pioneers to the other reed, and cleared the shed. When using hand-spun yarn, which was comparatively smooth, no such pioneer was required, but ever since the introduction of the mill kind such a false reed has been indispensable and is used to this day in weaving stuffs wholly of worsted. Where the warps are of cotton, linen, or silk, it is not needed.

When, however, by means of the false reed and the improvement of mill yarn its advantages could be properly brought out, a vast increase of production in weaving ensued. Singularly enough the fly shuttle had never, on account of the defects of yarn spun on the one-thread wheel, been extensively employed in weaving stuffs. This arose from such a description of yarn being much broken, thus in a great degree impeding the labours of the weavers in taking up the threads. From this cause, united to a prejudice of the old weavers, the fly shuttle invented so early as the year 1738, by Mr. John Kay, a native of Bury, in Lancashire, but then engaged at Colchester in its manufactures from wool, was not employed in weaving worsted stuffs. But when weft, spun at the mill, came into use, being unbroken, the advantages of the fly shuttle were at once perceived and adopted. Though very effective, and saving much bodily exertion to the workmen, the shore or fly shuttle consists of a very simple appendage to the loom. A peg, called the picking peg, held in the weaver's right hand, has attached to it two strings connected at each end of the lathe with an apparatus for driving the shuttle through the shed, upon the workman giving a quick jerking motion to the picking peg. With machine spun yarn of fair quality, a weaver employing the fly shuttle could with ease perform a vast amount more of work than by the old method. A person gives this description of the difference:—"I was not able to weave a piece a week with hand-spun yarn, and had many thousand ends down, but with machine spun, when the system got fairly set a going, I could weave a piece a day without an end down from beginning to end, and also could wind my own bobbins." It will thus be easily



conceived that the means of production were by the use of spinning machinery vastly increased, not only in yarn but also in weaving—and quite changed the aspect of the trade.

But one of the most prominent effects of the introduction of machinery into the worsted manufacture, is exhibited in the gradual rise from the era of this century, of Bradford, and its ultimate ascendancy over every other town engaged in the business. Halifax, as before observed, took during the latter part of last century the lead among the northern towns as the emporium of the stuff manufacture, and enjoyed great prosperity until the breaking out of the French War, when its trade, chiefly foreign, declined, on account of the continental markets being closed against our manufactures. The mercantile houses engaged in the worsted export trade, either abandoned their pursuits, or followed them upon a reduced scale, and many of the smaller manufacturers entered into the cotton business. When, therefore, many worsted mills were, in the early part of the century, built in Bradford and neighbourhood, they imparted a new and powerful impulse to its trade, and drawing to the place worsted makers, it soon rivalled, and eventually surpassed Halifax, taking the station which the latter town had occupied. Another of the effects of the introduction of machinery into the northern stuff manufacture shewed itself in the gradual decline of the stuff business in the midland and southern counties, and its transference to Bradford and the vicinity.\* These positions are abundantly confirmed by a merchant of experience, well acquainted with the subject, who asserts it was a prevalent opinion, that about the year 1800 the average weekly number of pieces exposed for sale in Bradford Piece Hall amounted to not more than 3,000, but in a very few years the number had become trebled.†

\* “It was in fact,” observes a well informed writer, “the adoption in the West-Riding of Yorkshire of the steam engine, and the adaptation of the machines which had given so vast an impulse to the cotton trade, to the processes of the woollen and worsted manufactures, that led to the final transfer of those trades from Essex, Suffolk, and Norfolk, to the former county.”

† Thomas Crosley, Esq., Bradford.

The same authority also mentions, that long after the erection of worsted mills in Bradford they were unable to supply a sufficiency of yarn, and hand-spinning was prevalent.\* In a portion of the town named Back Lane, a score spinners could be counted plying their labours at the wheel in the open air during fine weather, but their productions now, except for particular purposes, were not accounted equal to mill-spun yarn, and by a curious reversal of former circumstances, the weaver evinced as much anxiety to obtain mill-spun yarn as he had formerly decried its use. Year by year less yarn was brought from Craven, and other hand-spinning districts, and henceforward all the operations of the stuff business became more centralized.

One of the first incidents connected with the commencement of the century, affecting the worsted as well as the woollen manufacture, arose out of a resolution of the House of Commons relative to the Union of Great Britain and Ireland, and conceding to the latter country the right to freely import English wool and export Irish manufactures. In short, that the two kingdoms should, in respect of wool and textile fabrics, stand upon equal terms. The English woollen and worsted manufacturers took alarm at this concession, which they alleged would grant increased facilities for the illicit export of our wool, and also inflict, through Irish competition, much damage to their business. Petitions against the measure, couched in energetic language, were presented to Parliament from, among other places, the following worsted districts:—Leeds, Wakefield, Bradford, Halifax, Keighley, Haworth, Skipton, Addingham, Colne, in the north; and Norwich, Sudbury, Exeter, Market Harborough, &c., in the south; and at the request of the petitioners, counsel were heard and witnesses examined on their behalf at the bar of the two Houses of Parliament. One of the principal of these witnesses, Mr. William Hustler, woolstapler, Bradford, gave evidence as follows:—"It is impossible for me to state the

\* So greatly had the employment of the fly shuttle increased the demand for yarn.

exact quantity of wool grown in this kingdom. I know of no register nor any documents from which I can collect it with certainty, but I have seen calculations made by my father, who was engaged in the wool business sixty years, and several others made by gentlemen in different parts of the kingdom, which stated, that some years ago the quantity of wool grown was estimated at 600,000 packs.\* These accounts, I believe, have been received as being made with correctness, and from the knowledge I now possess of the growth of wool in the kingdom, I have no reason to believe that the alteration is great, therefore I calculate the quantity now grown in the kingdom as being the same or nearly the same as formerly.”†

\* On this statement, Mr. Luccock has, in his *Treatise on Wool*, the following observations:—“It is not necessary to search into records for the general opinion of the present day (1805), that England and Wales produce about 600,000 packs of wool, as it is usually received without examination. I have not been able to discover upon what basis this conclusion rests, but it was formerly supposed that Great Britain produced that number of packs; and it seems probable that some person, by a very easy mistake, has quoted the number as applicable to England alone, and the error has passed from one to another without being suspected or examined until it has become an opinion so firm and settled, as to form the basis of reasoning even in the House of Commons. Indeed the greatest mistakes that have been made on this subject seem to arise from two sources—the assumption of 600,000 packs as the produce of England and Wales, and the different quantity of land which is assigned as the extent of the kingdom. On subjects of this kind we can only form general opinions, and his are the most likely to be accurate who collects facts with the most patient investigation, and reasons from them with the soundest judgment.” On referring to page 321 ante, it will be seen that Mr. Luccock estimates the yearly produce of wool in England and Wales at about 400,000 packs.

† “Some of the gentlemen who gave evidence before the Committee estimated the quantity of wool annually produced from 28,800,000 sheep (the supposed stock in the kingdom) to be 600,000 packs, for which they assumed the medium value of £11 per pack, the whole being £6,600,000. The value is increased in the manufacture from double to ninefold, assuming threefold as an average, the total value of woollen goods manufactured in the whole kingdom is £19,800,000. In the year 1782, it was estimated at £14,000,000 and in 1791 at £19,000,000. This vast manufacture is supposed to give employment to 3,000,000 of people.” *Macpherson’s Annals of Commerce*, vol. 4, page 526. As to this statement of the value of the whole manufacture from wool being nearly £20,000,000, and the number of persons employed therein 3,000,000, it is evidently a gross exaggeration such as abounded in those days. This extract has been taken from Macpherson, to give the reader a view of the state of opinion then on the subject.



Mr. Hustler also produced a table of the relative prices of wool in the two countries :—

	IN ENGLAND. per lb.	IN IRELAND. per lb.
	d.	s. d.
1795	8 $\frac{1}{4}$	0 11
1796	10	1 2
1797	8 $\frac{3}{4}$	0 9 $\frac{3}{4}$
1798	7 $\frac{1}{4}$	1 0 $\frac{3}{4}$
1799	8	1 3

Hence it was contended, that if the free export of wool should be conceded to Ireland, a large quantity would immediately be bought in the markets of this country for the use of the Irish manufacturers, and in consequence ours would, in proportion, be deprived of employment, because he stated that the supply was then insufficient for the demand. “I think,” said he, “that in 1783 and 1784 the quantity on hand of long and coarse wool was estimated as being at least three years’ growth. The old stocks have been gradually lessened by being worked up, and in the present and last years I have experienced difficulties in buying the quantity of wool I wanted.” It must not, however, be inferred from this scarcity, that the worsted business was thriving—as that applies only to the woollen portion.

But the main force of the opposition arose from the worsted manufacturers; because, on both sides it was confessed, that in fabrics made from fine wool, the Irish neither could nor would attempt to compete with us: but that in worsteds the contest would be great, for of late years, the exports of Irish yarn had decreased to almost nothing, whilst the Irish home manufacture of serges and stuffs had increased. Government, in spite of all opposition, carried by a large majority the Act of Union with the clause justly allowing the Irish the same privileges in manufactures as ourselves.

These proceedings exhibit the excessive jealousy with which the English fleece was at this period guarded. But despite every endeavour of the English manufacturers to prevent the exportation of our wool, (which now, from

various causes, had become inadequate to the demand,) the practice continued. To devise means for checking it, the merchants, manufacturers, and others, concerned in the woollen and worsted trade, held a meeting at Halifax, in June, 1801, when, on it being represented that the exportation of wool prevailed greatly, and that especially great quantities of worsted yarn, (under the denomination of worsted twist) were publicly exposed for sale in Portugal and Germany, causing, in a great measure, the depressed state of the worsted manufacture, the meeting resolved, that a number of gentlemen should be appointed a Committee to co-operate with the Worsted Committee in detecting and punishing the exporters, and for this purpose voted a reward of £100 to the informer. The Worsted Committee also, at the same time took energetic steps to prevent the exportation of wool and yarn, and offered a reward of £50 for the detection of the offenders.\* But the valuable labours of the Worsted Committee were next year imperiled by a Bill brought into Parliament to take from the manufacturers of wool the allowance of the duty on soap employed therein. In consequence, the worsted manufacturers of the counties of York, Lancaster, and Chester, convened a general meeting in October, 1802, at which resolutions were passed, declaring, that to lay a duty on soap used in washing wool would

\* The following is a List of the Committee in the year 1800 :—

Mr. William Curren, *Luddenden Foot*.  
 „ John Carter, *Lightcliffe*.  
 „ J. Hollings, *Bradford*.  
 „ Balme, *Horton*.  
 „ George Craven, *Thornes*.  
 „ James Garnett, *Bradford*.  
 „ James Maden, *Bacup*.  
 „ James Hartley, *Fulshaw, near Colne*.  
 „ William Smith, *Almondbury*.  
 „ Christopher Rawdon, *Underbank, near Halifax*.  
 „ Henry Hall, *Leeds*.  
 „ Jonathan Hargreaves, *Fence, near Burnley*.  
 „ James Taylor, *Halifax*.

Mr. Jeffrey Folds, *Ing Hey, near Colne*.  
 „ Thomas Simpson, *Richmond*.  
 „ William Pollard, *Horbury*.  
 „ John Ormerod, *Bacup*.  
 „ Thomas Dawson, *Keighley*.  
 „ John Sutcliffe, *Lee, near Halifax*.  
 „ Robert Hargreaves, *Linton*.  
 „ Richard Ecroyd, *Lomeshaw, near Colne*.  
 „ Falkner Philips, *Manchester*.  
 „ Stephen Smith, *Hill, near Burnley*.  
 „ Charles Clapham, *Leeds*.  
 „ John Knowles, *Studley, near Halifax*.  
 „ John Rand, *Bradford*.

impose additional burdens upon the trade, and give advantages to foreigners. It was alleged as a plea for endeavouring to withdraw this boon to the worsted trade, that numerous frauds were committed by parties claiming more for drawback than was honestly due. A deputation from the meeting proceeded to London, and assisted by Mr. Wilberforce, induced the Government of the day to withdraw the Bill.

Short as the Peace of Amiens proved, it conduced to the prosperity of the worsted business, which from this date began to extend its productions. These were the principal stuff goods made in England at this period:—

Shalloons, full-twilled stuffs, that is twilled on both sides, made of single warp and weft, woven with four treadles in a variety of qualities, some having five score hanks of weft in a piece, others eight or nine score, and ranging in breadth from thirty-two to thirty-six inches wide and twenty-nine yards long. They were made from Lincolnshire and Yorkshire wool. This class of goods formed the material for female dresses. Large amounts were dyed scarlet and forwarded to Turkey.

Says, a stout shalloon, twilled the same, and woven with a four heald twill, but the warp and weft for says were heavier to make a stouter stuff, and they were also usually fabricated from wool of a superior quality, and made forty-two inches wide, and forty-two yards long. As before noticed, they were largely exported to Spain, Portugal, and the Italian States to make priests' attire. Both says and shalloons were made heavier at the commencement of the century, than at present.

Russels, a kind of lasting, manufactured of double warp and single weft, and with a five heald twill like the calimanco which it resembled in all respects except being stouter, having a double warp. They were woven in many qualities (varying from one hundred and eighty to four hundred hanks of weft in a piece,) twenty-seven inches broad, twenty-eight yards long, and, on being finished, were sometimes glazed. They were used for ladies' petticoats, boots, shoes, and men's waistcoats.

Lastings, a stout fabric only eighteen inches wide, with



double warps, (sometimes of three threads,) and single weft, made with a five heald twill of Nottinghamshire and best Lincolnshire wool. There were different sorts of lastings as prunelles wrought with three healds. Also serge de Berry, a variety heavier, and woven with seven healds.

Drawboys were figured stuffs, woven in a loom of peculiar construction, and required the aid of a boy to work the figures. The weaver could sometimes dispense with the services of a boy by touching a spring, which enabled him to change the pattern.

Amens, a figured stuff made with double warp.

Calimancoes, plain and striped stout stuffs, seventeen inches wide, and twenty-nine yards long, both made with single warps, and glazed in finishing, chiefly employed for making ladies' petticoats and chair-seating.

Tammies, a plain piece from eighteen to thirty-six inches in width, made from deep stapled Lincolnshire and Yorkshire wool, and manufactured in great variety from forty-eight to eighty threads of weft, and forty-eight to sixty threads of warp to an inch. They were a fine class of goods and often glazed in finishing. At this period, besides being sent abroad in great numbers, they were much used in England for ladies' dresses. At a County Ball given at York, in 1808, and comprising the rank and fashion of the north, the ladies were attired in tammy dresses, and very gay they appeared.

Wildbores, a tammy made much stouter and closer woven, but not glazed.

Camblets, made both plain and twilled, width eighteen to twenty-seven inches, length twenty-nine yards, some woven with single warp and weft, others with double warp, and sometimes with double weft also, and of thicker yarn. There was another sort, chiefly made at Norwich, in some respects different to the above mentioned, each piece being thirty-two inches wide, fifty-five yards long, and weighing about twenty pounds. They were woven in the grey state and afterwards dyed various colours, and hot-pressed ready for the market. Camblets, as before mentioned, were largely exported to the East Indies and China. Those for the home market were mostly used for making cloaks.

Moreens, made of stout heavy materials, watered and embossed, chiefly used for furniture, width twenty-eight inches, length twenty-four yards.

Bombazines made with silk warp and worsted weft (spun from fine Norfolk and Kent wool,) the worsted being thrown upon the face or right side. There were two widths of this article: the narrow, about eighteen or nineteen inches wide, used principally for home consumption, and the broad, from forty to fifty inches wide, principally sent abroad. Both kinds were generally sixty yards long.

The chief worsted manufacturing districts were in the north:—

Halifax, the main trade whereof consisted in shalloons, says, lastings, russels, and drawboys. Shalloons, amens, and drawboys, were made at Keighley and Haworth, and exhibited for sale in Halifax Piece Hall. Lastings, made at Ovenden and Illingworth; russels at Luddenden Foot, Hebden Bridge, and adjacent districts.

Bradford, tammies and calimancoes, and some few shalloons.

Wakefield, tammies and wildbores.

Leeds, camblets and worsted plaids, and tammies.

Colne, Colne serges, a heavy narrow stuff.

In the south:—

Norwich; camblets, bombazines, moreens, damasks, calimancoes, and lastings.

Suffolk, calimancoes and says.

Northamptonshire, harrateens and tammies.

Exeter and Devonshire, serges.

A resident in Norwich at this date,\* after noticing the manufacture of camblets in that city, proceeds to give a description of the calimancoes &c. made there, from which the following is extracted:—

Various other articles composed entirely of worsted were produced at Norwich: they were called calimancoes, satins, brilliants, &c. These were woven in various patterns which were formed in the loom, and were composed of the richest and most brilliant dyes, and variegated by an endless diversity of colours,

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\* Mr. William Stark who gave evidence before J. H. Mitchell, Esq., one of the Commissioners appointed in 1836 to inquire into the condition of hand-loom weavers.

in the forms of flowers, birds, figures, and fancy subjects, upon the face of the goods. Many thousand pieces of these were made annually, and exported principally to Russia, Germany, and Holland.

For the Dutch market was made also a very large quantity of checked and striped camletees, a narrow and thinner article than the camlet before mentioned. For the two Leipsic fairs, (namely, the spring and autumn fairs,) orders to a very great extent were received periodically by the then manufacturers of this city for the above fabrics, besides also for another article called fine narrow camlets. The above trade continued uninterrupted until Bonaparte made his excursions on the continent of Europe, since which time no orders have been regularly sent either from Germany, Holland, or Russia. The articles called calimancoes which, besides those enumerated above, were made to an extent that kept many hundred weavers constantly employed. These were made for Russia, where they were used by the Tartars and other Siberian tribes for sashes. The calimancoes were made of worsted about eighteen inches wide and thirty yards long, and were striped in the warp of various colours in the form of shades, beginning at one edge of the stripe with a light tint of colour and gradually increasing in depth of shade till the other edge of the stripe was almost black. Sometimes the centre of the stripe would be made of a light shade, and the two sides gradually deepening till, at the extreme edges, it was dark. The effect was pleasing, as the colours used to produce these shaded stripes were of the most varied and brilliant kinds. This manufacture was peculiar to Norwich, and the colours employed for it surpassed any others dyed in Europe. About this time, and for many years subsequently, a striped worsted article called calimanco, but woven in the grey and afterwards dyed, was introduced; this was dyed in the piece after being made of various shades of drab, pinks, browns, and black, and used generally for home consumption.

The bombazine business, he states, was very flourishing. The fabric was mostly dyed black for mourning, but some were finished in colours. The finer kinds were much worn by English ladies; the coarser descriptions by the people of a lower class.

There are extant two stock accounts of machinery and effects at Dolphin Holme Mill, in the years 1803 and 1807, from which, a few extracts will afford the reader some grounds for comparison with the economy of a modern worsted mill, and enable us to ascertain the price of wool and yarn in that day. In the first of these stock takings the machinery alone is included. The spinning department consisted of four sliver frames, (each comprising several boxes,) valued at £6 each; two drawing frames at £40 each; one new drawing frame £56; an old roving frame with six spindles £6; and another old one with twelve spindles £30; one new roving frame with twelve spindles £57; and another with fourteen £43



There were also forty new spinning frames at £74 each. These, according to an eye-witness, contained forty-eight and sixty spindles each. The stock taking of 1807 comprises all the partnership property of Hindes and Patchett. In addition to the former machinery, there are five new spinning frames of ninety-six spindles each, valued at £84 5s. a frame. They were made to spin fine yarn for the Norwich market, and soon after this period, such yarn being forwarded thither in considerable quantities, the Norwich artisans were so exasperated by the use of mill-spun yarn, that early in the century they rose in a mob on seeing Mr. Patchett in the city, and he narrowly escaped with his life. All the spinning machines at Dolphin Holme were water-frames of superior construction. Indeed 'throstles' were not introduced there until the year 1824.

The fleece wool in the establishment is valued at 9½d. per pound. Wether wool tops in drawing frames at 1s. 4½d. per pound; hog wool ditto 1s. 6¼d.; and super tops at 1s. 11d. It is evident that they spun only to as fine counts as thirty-fours. The following are the rates affixed to the yarn per gross:—sixteens at 18s. a gross; eighteens 16s. 6d.; nineteens 16s. 6d.; twenties 16s.; twenty-threes 15s. 3d.; twenty-fours 15s.; twenty-sixes to thirty-fours 14s. 6d.\* They had an agent at Bradford whose stock of about four hundred gross of yarn ranged from sixteens to thirty-threes, and another at Halifax with the like quantity, among which were some thirty-fours. It is therefore certain that yarn was then brought from a great distance to these districts. Large amounts of Dolphin Holme worsted were also forwarded to Manchester to supply the small ware manufacturers. A small quantity, ranging from sevens to twenty-sixes, found sale in London, mostly to make epaulettes. Glasgow took a considerable amount, in numbers from sevens to sixteens, chiefly, it is stated, for the tartan manufacture. But the chief customers of Messrs. Hindes and Co., were the serge makers of Exeter, for that

\* It may be necessary to explain, to the mere general reader, that these technical terms of sixteens, eighteens, &c., denote the fineness of the yarn, shewing that in the low counts sixteen hanks only were spun from a pound of wool.

firm's agent there, had in his hands 10,250 chains or warps, valued at 9s. 10 $\frac{3}{4}$ d. each. In the stock are forty-six gallons of Gallipoli oil at 7s. per gallon, a high price. The total valuation of the partnership effects amounted to £22,691, of which the wool account formed an item of £1,455.

As before alluded to, the stuff trade on the Peace of Amiens rapidly extended, but after a brief interval the renewal of hostilities to some extent again occasioned a check. The stuff business however, along with the general manufactures of the nation, improved the next year, when our exports greatly increased during the next three years. In the year 1807, our continental trade suffered severely through the influence of the famous Berlin decree commanded by Napoleon, and our exports of stuffs to Germany were stopped, except so far as could be effected by contraband means. The passage into the Baltic was also, after the bombardment of Copenhagen, effectually closed against us. Russia laid an embargo upon our manufactures, and the nations of Germany durst not admit them within their borders. But compensation for these adverse circumstances arose in the year 1808, by the opening of an extensive trade with South America. "The transfer of the seat of government from Portugal to the Brazils, and the virtual emancipation of the Colonies of Spain from the control of the mother country, opened the trade of a great part of South America," and the exportations consequent thereon of every description of textile production were extraordinary. Speculation was pushed to an extreme point, and the quantity of English goods of every description poured into Rio Janeiro became so very great, that warehouses could not be provided sufficient to contain them. Large quantities of the stuffs sent to South America found sale in the United States, where an embargo had been laid on them by the American government. The year of 1810 was one of great depression, arising partly from the failure of our corn crops and the extensive confiscations of our exports in the ports of Germany, and also from the glut of the South American market with our goods, whence a re-action had occurred in that quarter. The entire number of commissions of Bankruptcy taken out this year numbered 2,314 of which 26 were against bankers. But the impulse



of machinery had now been fully felt in the West-Riding stuff business, counteracting the disastrous effects experienced in former calamitous times; and it was emphatically remarked, that those manufacturers, who, with the obstinacy of persons adverse to change, adhered to the old system of hand-wheel spinning, were most affected in this trying season. The stuff trade suffered less in comparison than other textile pursuits during this memorable year, and this circumstance may be attributed to the healthy state of the manufactures.

An opportunity is afforded of presenting a view of the worsted manufacture in the West-Riding, enabling us with considerable accuracy, to ascertain the relative proportion of wool prepared for combing in each town or village engaged in the process in the year 1810; also furnishing data wherefrom an estimate may be deduced of the quantity of wool then used in the worsted manufacture of the West-Riding. Previously, it has been mentioned, (page 296), that a fund for carrying out the objects of the Worsted Acts was provided out of the drawback on soap employed in manufactures from wool. The collectors of excise have from time to time furnished the Clerk to the Worsted Committee with returns of the drawback allowed to manufacturers of combing wool.\* The following is a classified statement of such return for the year 1810, which is the first of the series sufficiently perfect to be quoted for the purposes of this work.

\* In the tenth year of the reign of Queen Anne, (1711,) all soap made in Great Britain had imposed upon it a duty of one-penny in the pound, and on the imposition of this, an allowance in the nature of drawback, and intended as an encouragement of manufactures of wool, was directed to be made upon all soap used therein. Two years after, (1713,) the duty on soap was raised to three half-pence a pound. In the year 1783 a distinction was drawn between hard and soft soap, the former being charged with a duty of twopence farthing per pound, and the latter with one of one-penny three farthings. The duty on hard soap, was, in 1833, reduced to three half-pence, and that on soft soap to one-penny. (17th Report of Commissioners on Excise Inquiry, 1835.) The rate of allowance made to manufacturers of wool in the nature of drawback has been at various times altered. In the early part of the century it amounted to three half-pence on the pound of soap used. In Marshall's Statistical Tables (page 70) it is stated, that the allowance on soap used in the woollen manufacture amounted, in 1806, to £31,000; in 1809, to the like sum; and in 1812, to £33,000. Nearly all the soft soap made is used in the woollen, silk, cotton, and linen manufactures. In some parts of England the woollen manufacturers use also hard soap.







faith can be placed in this sort of calculation, where most of the data are so uncertain; but the above is entitled to some weight, being based upon better grounds than the loose estimates respecting the value of the woollen manufacture in the last and early part of this century; for here we have the drawback as a positive basis. Neither does it seem inaccurate to quadruple the value of the wool in order to ascertain the whole cost of the piece.\* Although wages had risen, and what is more to the purpose, much finer descriptions of goods had begun to be made, yet probably the cost of production had, on the whole, lowered since the latter part of last century, because of the application of spinning machinery, and of the fly shuttle increasing so greatly the power of production. From the year 1800, when the worsted manufacture in the West-Riding was calculated at £1,400,000, it had seemingly been augmented in yearly value to nearly £400,000.† Whether this amount be correct or not, certainly it had vastly increased.—It must be minded that in many of the towns and villages above enumerated, the persons who obtained the drawback were only combers or wool top manufacturers, who sent their combed wool to the Bradford, Halifax, and Wakefield markets, to be wrought up in these centres of the trade. For all places where the wool was fabricated into stuffs, the above list forms an excellent standard of the relative amount of their spinning and weaving operations.

It will be observed, that in Bradford, more than double the quantity of combing wool was used than in any other town. Thirty-eight persons in Bradford claimed the drawback in 1810, and some of them for a large amount: Richard Fawcett and Sons, for instance, the large sum of £309; John Rand, £107; Matthew Thompson, £55; Messrs. Edward and Joseph Pease, £48; Piele and Thompson, £41; James Risdon, £40; James Wade, £35; Richard Smith, £28;

\* As will be seen in subsequent parts of this work, the cost of the manufacture was long afterwards estimated at four and even five times that of the material.

† To arrive at this conclusion, the amount of drawback for Burnley and Colne district is deducted, but not that of the York collection, because the persons who, in that quarter, claimed the drawback, brought their combed wool to the West-Riding to be worked up.



John Wood, £25; William Firth, £24; the sums allowed to the remainder were under £20 each. Haworth ranks next to Bradford in the amount of wool used, not fewer than thirty-two persons being enumerated among the recipients of drawback, and some of them for high amounts: James Greenwood, £90; Joseph Pighills, £64; Sugden and Heaton, £56; John Feather, £34. In other parts of Bradford parish, there were several large manufacturers, namely, William Terry, of Bowling, whose allowance of drawback is set down at £39; Richard Nicholls and Co., of Hewnden mills, £43. Halifax town, had only fifteen such recipients, of whom the only one of large amount were Turney and Bates, who claimed £179, all the rest were for small sums varying from £12 downwards. In the parish there were numerous large manufacturers who made a claim for drawback of the following sums, namely, James Ackroyd and Sons, of Ovenden, £48; Messrs. Edmondson and Co., Mytholmroyd, £236; John Murgatroyd, of Warley, £53; John Sutcliffe, of Hep-tonstall, £48; Ingham, Knowles, and Co., of Lob mill, Stansfield £47. Keighley had nineteen manufacturers: John Sugden claimed £40; John Spencer, £33; William Sugden, £26. For Bingley parish, sixteen persons are enumerated: John Nicholl claimed £25; John Sharp, £20; Charles Hartley and Co., £17. Messrs. Birkbeck, of Skipton, £118; Peter Hartley, of Kildwick, £65; Thomas Holiday, of Tong, £65. A long list of names could be produced of other considerable manufacturers but space forbids.

Credit began to revive in 1811, and the confidence between the manufacturer and export merchant, which last year had been lost, gradually returned. Among other favorable signs, our old established Portuguese and Spanish markets were again opened. The expulsion of the French from Portugal, and the successes of our arms in Spain set free nearly the whole of the Peninsula, and consequently large exportations of stuffs were forwarded thither. Added to this the superabundant stock of goods shipped to South America during the commercial speculations of 1808-9 had, in the interim, been sold off, and a brisk and legitimate demand now ensued in

that quarter. Our shipments, however, to North America ceased this year in consequence of the prohibition by Congress of British manufactures, but the predilection in the States for our stuffs was to some extent satisfied through West-Indian channels. Hereafter, however, the trade in lastings, an article extensively used for light summer coats in the States, especially languished. The next year war being declared against us by the American Government, henceforward until the ratification of peace in December 1814, our commerce with the United States suffered in all its branches.

Notwithstanding the disturbed state of the clothing district of the West-Riding, in 1812, consequent on Luddism, the agitation did not extend to the neighbouring worsted department. True, the stuff-weaver laboured under very severe privation from the excessive dearness of corn and the increase in the rate of several other articles of subsistence, but he bore his lot without much complaint. Employment was plentiful, and the demand for stuffs steady at fair prices. Altogether the worsted manufacture this year exhibited a favorable condition which continued during the whole of next year, when the ports of Germany, owing to the disastrous retreat from Moscow, were opened for our goods, and the export of stuffs to that quarter commenced with renewed activity. The year 1813 was characterised by a large amount of speculation in worsted stuffs, both for the German and other markets, and all hands were fully employed.

About this period, an impetus was given to the Yorkshire stuff trade, by the introduction of some new articles of worsted. Moreens, had, until about the year 1811, been a fabric peculiar to the manufactures of Norwich; but at that date they were introduced into Yorkshire either by Messrs. James Akroyd and Sons, of Brook House, in Ovenden, or Mr. John Holland, of Slead House, near Halifax. There is a controversy as to which of these first transplanted the making of moreens into the district, which could not, it appears, be decided at the time, and it is hopeless now to attempt to adjudicate with fairness on the subject. But as to the originator



of another important article of worsted, there is not, nor can be, any dispute. The plainback, a twilled stuff, the fore-runner of the merino, but made stouter, owed its birth to the enterprise of Mr. James Akroyd and his two sons Jonathan and James Akroyd, who carried on business in partnership at Brook House. To this family the Yorkshire worsted manufacture from the commencement of the century to the present, is under deep obligations for many new articles brought into the market, and for the spirit of improvement they imparted to the trade, without which it would have lagged behind the age. They began to fabricate plainbacks about the year 1813, woven twenty-seven inches wide, of single warp and weft. The name is derived from these goods being twilled on the face but plain at the back. At the end of the year 1814 a variety termed spotted plainbacks was brought into the market, but owing to the range of figures being confined, only continued for the season or summer of 1815. These were very difficult to make, being woven with nine healds and nine treadles, and only a skilled workman could accomplish the task, for which he received fourteen shillings and sixpence a piece, putting in each ninety-four hanks of weft.

At the same time Mr. James Akroyd, Junior, above-named, who had removed to Old Lane, near Halifax, introduced into the market a species of stuff termed 'dobby,' from being woven by the aid of a wood machine with that appellation placed across the loom, and in use to the present period for weaving coat linings of cotton warp and worsted weft. A dobbie piece was, in truth, nothing more than a figured wildbore. The figures, at first, were mostly a small diamond or lozenge, designated bird's eye, but there was a capability of great range of figure, being woven with from sixteen to nineteen healds, so that, eventually, the figures consisted of flowers and other patterns and devices of a small kind, not exceeding a sixpence in size. Some few dobbies are made at the present day. Plainbacks and dobbies continued in great vogue for several years after being brought out, and gave a great stimulus to the Halifax trade, which, now, after a lapse



of about twenty years, began to revive, and evince tokens of its former vigorous and lively condition. From this point, in fact, we have the era of the Halifax fancy trade, which has conducted so greatly in after days to the prosperity of the town and neighbourhood.

Before the introduction of plainbacks, all the Yorkshire stuffs were woven either altogether plain or twilled on both sides. The plainback was manufactured in the manner of bombazines with a single twill thrown to the face; and this change formed an important era in the Yorkshire trade, giving rise to many improvements.

Like that of 1808, the year 1814 is noted as one of extraordinary speculation and enterprise. The opening of the continental markets, consequent on the Peace, caused vast quantities of our manufactures, especially woollens and worsteds to be shipped thither, but the necessities of our former customers had driven them to substitute other fabrics for English ones.\* Besides the continental nations, impoverished by long wars, could not afford to gratify their taste for foreign and expensive clothing, such as they had formerly indulged. Hence the ports of Europe were glutted with our goods, and the demand which had been anticipated, failed. But the consequences were only felt in the succeeding years, and the brisk sale by the manufacturer to the merchant rendered the stuff manufacture, as well as other branches, exceedingly prosperous during the greater portion of the year.

But towards the latter part of the year the consequences of over-trading begun to be felt, and many merchants became embarrassed in their concerns, and the opening of the year 1815 was exceedingly disastrous to trade. The stuff business, however, did not suffer in proportion to other branches, for

\* Although from the time of the Invasion of Holland by the French, in 1795, the stuff trade with the Continent had been, in part, circumscribed and interrupted, it was carried on freely with several of the most considerable ports, and commercial intercourse was maintained until the year 1807, but since then all trade and correspondence with the Continent had, with some occasional exceptions, chiefly in Sweden and in parts of Spain and Portugal, been hazardous, precarious, and expensive, and at times nearly stopped.—*Craik's History of Commerce*, vol. 3, p. 206.

the opening of the commerce with the United States on the conclusion of the peace with them, counteracted by the very large demand coming from that quarter the evils resulting from the state of the continental markets.

At the close of the war the worsted trade continued to progress both in quantity and value, but especially the former. During the last five years that of the North had augmented about one-fifth in yearly amount. It has been seen that in the year 1810 the drawback on soap used for combing wool in these parts hardly reached £5,000, now, (1815,) it exceeded £6,000, thus distributed:—

			£	s.	d.
Bingley District	..	..	496	6	4
Burnley and Colne District	..	..	441	8	7
Bradford	do.	..	1484	15	1
Halifax	do.	..	1419	3	4
Huddersfield	do.	..	214	7	4
Dewsbury	do.	..	29	11	2
Leeds	do.	..	219	8	6
Otley	do.	..	287	11	7
Keighley	do.	..	943	12	5
Skipton and Addingham	..	..	290	16	6
Wakefield	..	..	81	0	5
York Collection	..	..	126	11	11
			<hr/>		
			£6,034	13	2
			<hr/>		

These £6,000, according to the method adopted previously, (see page 370) represent the value of the manufacture in the above districts as being £2,300,000,\* which exhibits, during the previous five years, an increase to the large amount of about £400,000 in the yearly value of the stuffs produced there. At the same time the whole of the stuffs

\* Sir Frederick M. Eden, in his valuable work on Insurance, estimated, about this period, the value of woollen manufactures consumed in England at £11,000,000, to which if £5,500,000 be added, the declared value of the exports of those manufactures, it will give £16,500,000 as the total value. Of this amount at least one-third may be claimed by the worsted department.

exported from the kingdom only reached in value to the sum of £1,501,015.

Until now, no attempt had been made, to present to the public a detailed statement of the several quantities and values of woollen and *worsted* fabrics exported. From time to time reports had been presented to Parliament exhibiting the gross value of the freight of *woollen* articles,\* and under this head every description of goods made from wool being comprised, it was impossible to ascertain the amount of stuffs sent abroad. In the year 1815 were shipped 605,228 pieces of stuffs of the value of £1,501,015; next year, 638,368 pieces of cloths of all sorts, and 593,972 pieces of stuffs were sent out of the country. Now let the reader mark with attention these proportions, for upon examination of the subsequent reports of exportation a weighty fact is elicited; he will find, on the whole, that whilst the quantities of stuffs gradually increase those of woollen cloths decrease, and that from this point we visibly trace the growing superiority of the worsted manufacture. The subjoined table exhibits the amount of “stuffs, woollen and worsted,” (a

\* Two methods have been adopted in ascertaining the value of our exports, one by means of the *official* value, the other according to the *declared value*. In Lowe's Present State of England, (1822) there is a very succinct and clear account of these methods which is here extracted:—

“The *official* value of goods means a computation of value formed with reference not to the prices of the current year, but to a standard fixed so long ago as 1696, the time when the office of Inspector General of the imports and exports was established, and a Custom-house ledger opened to record the weight, dimensions, and value, of the merchandise that passed through the hands of the officers. One uniform rule is followed year by year in the valuation, some goods being estimated by weight, others by the dimensions, the whole without reference to the market price. [Worsted stuffs are valued at £1 11s. 8d. the piece, according to Macgregor's Commercial Statistics.] This course has the advantage of exhibiting with strict accuracy every increase or demand in the quantity of our exports.”

“Next as to the *value* of these exports in the market. In 1798 there was imposed a duty of two per cent. on our exports, the value of which was taken, not by the official standard, but by the declaration of the exporting merchants. Such a declaration may be assumed as a representation of, or at least an approximation to the market price of merchandise, there being on the one hand no reason to apprehend that merchants would pay a per centage on an amount beyond the market value, while on the other the liability to seizure afforded a security against undue valuation.”



description which it is supposed includes the serge manufactures of Exeter and other parts of the kingdom) sent to each country where they found sale.

“AN ACCOUNT OF THE QUANTITY AND DECLARED VALUE OF STUFFS, WOOLLEN AND WORSTED, EXPORTED FROM GREAT BRITAIN IN THE YEAR 1816, DISTINGUISHING THE COUNTRIES TO WHICH EXPORTED\* :—

COUNTRIES TO WHICH EXPORTED.	QUANTITY.	DECLARED VALUE	YARN EXPORTED.
	Pieces.	£	lbs.
Russia .. .. .	2,261	4,723	
Sweden .. .. .	15	25	
Norway .. .. .	479	1,096	
Denmark .. .	891	1,850	
Poland .. .. .	52	120	
Prussia .. .. .	188	382	
Germany .. .. .	37,748	80,244	
Holland .. .. .	31,447	62,391	
Flanders .. .. .	5,635	13,326	
France .. .. .	345	1,112	
Portugal, &c. .. .	27,472	72,091	
Spain, &c. .. ..	11,644	29,281	
Gibraltar .. .. .	10,659	24,874	
Italy .. .. .	14,852	37,930	
Malta .. .. .	3,682	9,603	
Turkey and Levant	1,816	4,222	
Ireland and Isle of Man .. .. .	8,150	20,883	523,638
Guernsey, Jersey, and Alderney .. }	837	2,319	
Asia .. .. .	187,820	572,325	
Africa .. .. .	1,638	3,353	
America, viz :—			
United States ..	202,061	609,628	
British Northern Colonies .. }	21,362	55,511	8,757
West-Indies ..	13,094	27,649	
Foreign Continental Colonies }	9,810	21,845	
Honduras .. ..	14	28	
	593,972	1,656,811	532,395

\* Taken from the Returns presented to Parliament.

On analyzing the above, it is seen that the United States were the chief foreign consumers of worsted stuffs. Next after Asia, Germany ranks the highest; then Portugal, followed by Holland. Our Colonies purchased largely, especially those of North America. Italy and Spain each took a large amount of our stuffs, and even Ireland, where the worsted manufacture had for some time prospered, bought to the amount of £20,000. Our former large trade in worsteds, with Turkey and the Levant, had dwindled to insignificance, and so had that with Russia.

Of the stuffs sent to Asia, amounting to £187,820, a considerable portion was destined for the East-Indies and China. Many allusions have been made to the camblet trade carried on by the East-India Company, and in a previous page (310) some particulars respecting this trade are given.\* The following is a description of the mode in which the Company's purchases were effected at Norwich previous to the Peace, when a new system was introduced.

At the close of each year, after the Company had received their returns from China, they issued circular letters to the principal manufacturers, stating the quantity and kinds which would be required for the year ensuing, and inviting tenders, under the proposed stipulations, which regarded the times of delivery and the strict regulations to be observed as to the quality of the goods. The manufacturers held meetings, with their chairman, and received tenders from the dyers, &c., as to their prices for the year. They then agreed amongst themselves on the plan of making their offers, which usually terminated in an amicable distribution of the order amongst the members of this body. The deliveries were so arranged, as to make the order last to the close of the year; and payments were made as the deliveries were completed. Occasionally, the orders were given half-yearly, but no alterations were permitted during the continuance of the contract. Few instances can be found of a trade continuing so long, and affording such a degree

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\* In 1793, the East India Company's Charter was renewed for twenty years, up to 1813. By this Charter provision was made for partly opening the trade with India to private individuals. Any British subject residing in any part of the king's European dominions was allowed to export to certain parts of the East Indies, (but only in the Company's ships,) among other articles, textile manufactures. Scarcely, however, any goods were sent out to India under this provision. (Craik's History of British Commerce, vol. 3, p. 184.) The Company's Charter was again renewed in 1813 for twenty years, by which the trade to India was thrown open, and the manufacturers now began to avail themselves of the privilege. Until the year 1833 the Company had the exclusive trade to China.

of general comfort and adequate remuneration ; whilst the quality of the manufacture was preserved in a constant state of improvement. The strictness of the Company, as to this point, compelled them to pay a liberal price for the goods, and their anxious attention never to exceed the quantity demanded, enabled them in return, to remunerate themselves at the market of Canton. Such was the confidence placed in their honour, that these goods were sent to Peking without examination ; the Company's mark being reckoned sufficient warrant for their excellence.

Though the East-India Company, by their Charter, prevented any goods being sent to China in British ships, yet they could not hinder them from going in foreign vessels. And soon after the Peace, camblets began to be purchased in Norwich, to be sent to Canton in American ships. These were forwarded, under different circumstances, from those provided by the Company. The execution was generally very hasty, which precluded the opportunity for close inspection. The competition, as to price, was stricter, and the quality consequently inferior. They were generally smuggled into the country, instead of paying the regular impost duty at Canton. As the Company felt their demand decline from these causes, they withdrew from the contest, reducing their annual orders, gradually to 12,000 ; whilst the private trade, in some years, sent an equal quantity ; and this joint trade continued till another revolution took place, (1820,) which entirely altered the whole concern.\*

The yearly average value of the camblets now imported into China by the Company amounted to about £160,000, each piece averaging in price £7. In the year 1809, the Company imported into Canton for the China market, 21,770 pieces of camblet ; in 1810, 18,750 pieces ; in 1811, 22,340 pieces ; in 1812, 22,020 pieces ; in 1813, 23,010 pieces ; in 1814, 20,000 pieces ; in 1815, 14,590 pieces ; but in the year 1816, only 13,890 pieces. A very large number of camblets were in these times consumed in China, where they formed the Mandarins' dress. This trade attained its zenith in 1813, but after that date gradually declined as will appear hereafter. They sent in one year, (1811,) fifty pieces of striped duroys, and also forty-four pieces of figured duroys, but at no other time. In 1814, the Company exported to all other parts eastward of the Cape of Good Hope, except China, 4,911 pieces of camblets, serges, &c., at the declared value of £24,025, in 1815, 2,161 pieces ; but in 1816, only 1,999 pieces. For very many years, the Company had a monopoly of the trade to the East-Indies as

\* Senex's Letter in the East Anglian Newspaper, March 6, 1832.



well as to China, but private traders now began to compete with them. In 1814, 310 pieces were exported to the East-Indies by private traders; in 1815, 996; and the number in subsequent years rapidly increased.\*

During the year 1816, the decline in our trade, which had been going on throughout 1815, continued, and marked this as one of unusual depression. Commercial credit stood at a low ebb and numerous bankruptcies were the result. It was, however, principally in the home market that the stuff-business suffered most, as our exports remained nearly the same as the previous year. Consequent on the inactivity in the clothing departments, the price of wool lowered from the high rate it had borne, and caused much dissatisfaction among the agricultural section of the community. They attributed the cause to the large importations of Spanish and Saxony wool which for many years past had been made for the purpose of making fine cloth.† These importations tended to lessen the demand and price of home wools of every description, and the agricultural interest sought, in 1816, the aid of the Legislature to stop the foreign supply by the imposition of a tax upon it. This attempt occasioned much agitation and alarm in the manufacturing districts. Public meetings were held in various districts to petition against the measure. The House of Commons appointed a Committee to consider and report on the subject, and they received evidence of many woolstaplers and manufacturers. Mr. Matthew Thompson, of Bradford, gave evidence of the value of Lincolnshire wool, from the year 1789, which renders it certain that it had very much increased. The like testimony was adduced by Mr.

\* Porter's Tables, part 2.

† Quantity of sheep's wool imported from various countries in the following years:—

		lbs.			lbs.
1800	..	8,609,368	1810	..	10,914,137
1805	..	8,069,793	1815	..	13,640,375

In the first two periods Spain furnished about two-thirds of the whole, but in the year 1815 Germany yielded to us upwards of three millions of pounds weight, (being nearly half as much as that from Spain) and in the next ten years had increased her supply to twenty-six millions of pounds weight.

William Barff, woolstapler, Wakefield, as to Northumberland and Yorkshire wools. In a preceding page, (317) the rates are set forth to the year 1800, and the following will complete the price list to the year 1816 :—

	LINCOLN LONG WOOL PER TOD.	NORTH. AND YORKS. WOOL. PER lb.		LINCOLN LONG WOOL PER TOD.	NORTH. AND YORKS. WOOL PER lb.
	s.	d.		s.	d.
1800	24	9 $\frac{1}{2}$	1809	28	12 $\frac{1}{2}$
1801	32	12	1810	32	13
1802	33	13	1811	26	11
1803	33	11 $\frac{1}{4}$	1812	30	12
1804	33	12 $\frac{1}{2}$	1813	35	14 $\frac{1}{2}$
1805	34	14 $\frac{1}{2}$	1814	60	16 $\frac{1}{2}$
1806	27	13	1815	54	21 $\frac{1}{2}$
1808	23	10	1816	45	

Mr. Thompson attributed the high price in 1814 and 1815 to an increased demand. He stated, that a considerable quantity of yarn was sent from England to Ireland.\* The Committee reported against imposing a tax on foreign wool, and therefore the attempt was, for the present, frustrated.

A reaction to some extent took place in the year 1817. The stocks of the manufacturer and merchant had been greatly reduced. It was concluded that prices had reached the lowest point, confidence returned, operations upon a larger scale commenced, and wool rose in value, indeed much higher than the price of the manufactured goods at all warranted. While mentioning the stocks of manufactured goods, it may be noted that so different were the notions of trade, and the habits of the manufacturers in those days, that they were content to accumulate stocks of pieces without grumbling or despondency from the month of October to the following spring, when they expected the merchant to come as punctually as the season, and clear out every piece in their warehouses. Not so at the present day, when a dull market, or two, sinks the spirits of our modern manufacturers, paralyses his efforts,

\* Mr. Richard Fawcett, Bradford, Yorkshire, stated, that he imported Irish wool, similar to the long wools of Lincolnshire.

renders him doubtful of the future, and probably induces him seriously to contemplate working short hours, or retiring altogether from business. The export of stuffs reached this year 683,448 pieces, a rise of 97,607 pieces on the shipment of the year 1816.

Probably the most extraordinary epoch in the earlier history of the worsted manufacture may be awarded to the year 1818. The causes of depression in the last two years had ceased to operate. An augmented foreign demand for British stuffs, especially in North and South America, partly the consequence of restricted exportations thither the two previous years, and abundance of credit, tended to render this year one of great speculation and activity. As a consequence, combing wool obtained an excessive price, higher than it had before been this century, reaching two shillings per pound, and in some instances for choice lots a much higher rate. This occasioned an immense importation of wool which during the year rose to 24,717,960 pounds, being nearly double that of 1817. The demand for pieces alike increased for both home and foreign consumption. Our export of stuffs in 1818 amounted to the large number of 937,944 pieces, an increase on the shipments of the previous year of no less than 254,496 pieces. Nothing more is required to exhibit in the strongest light the vigorous state of the worsted business. This prosperity was not however shared in by the woollen branch, the export of cloth being even a trifle lower than in the former year.

Many causes conspired, at this period, to attract the earnest attention of the worsted spinners to the improvement of their machinery, which still remained in a rude state. The frames were mostly of wood, the preparing process performed in an inefficient manner, and the spinning portion of the work done at so great a distance from the nip of the drawing, that, besides the yarn not being twisted so well, the breakages of the thread were also so numerous as to materially lessen the production. Wool of a shorter staple had been gradually introduced into the manufacture, and the old spinning machines were not so well adapted for this kind



of material. It was also desirable, from the excessive price borne by wool, to produce yarn of finer qualities, so that from the same weight of wool a much larger surface of stuff might be woven. Added to these causes, the demand for stuffs, the high prices offered, and the prosperity of the trade, resulted, as usual, in bringing out a better class of goods. With the year 1818, a new era, it may be asserted, commenced in the preparing and spinning of worsted yarns. Hence arose very essential improvements in spinning machines, to meet the demand, and economize the wool by spinning it to a larger count. Formerly in the drawing frames, the first four heads were open drawings falling from the drawing heads into cans. The sliver was open and loose, and the fibres not stretched so completely as could be desired. Now the slubbing frame was brought into use in the worsted process, and the 'slubbing,' as it was designated, being wound upon the bobbin by the fly and spindle, kept the fibres of the wool upon the stretch, making an even drawing, whereby the subsequent operation of roving was much better performed. Then as to spinning: in the old frames the diameter of the boss of the front roller had been made from two and a quarter to three inches, and even reduced to about two inches, which enabled the back and front roller to be brought nearer together so as to spin shorter wool. But this adaptation was not a good one, and the bosses on the front roller were increased to three and afterwards to four inches in diameter, (which is the present size,) and the carrying rollers were constructed smaller and elevated above the front ones. Thus the yarn being spun nearer to the 'nip' prevented the numerous breakages of the yarn, which ensued under the former system where the spinning was performed at a greater distance from the nip. Incident to the improvements in spinning machinery, the weft and warp were produced of much better qualities from the same class of wool, and a larger face of stuff of a finer and smoother fabric obtained from the raw material, and when wool ranged at the excessive prices of the period, this saving bestowed great advantages upon the trade, keeping down the prices of the stuffs, and procuring

markets on the Continent, which an inordinate price would have closed.

Compared with the preceding year, that of 1819 shewed signs of depression, as a consequence of the speculation and excited prosperity of the former. Though there had been a diminution in the export of stuffs, as the number sent (including both woollen and worsted) to all quarters this year only amounted to 717,581 pieces, the falling off had chiefly been in the trade to the United States of America. But the chief manner in which the stuff business appeared to be affected, was not in the quantity in demand, but the low prices of fabrics, when compared with the high rate at which wool stood, owing partly to the wool growers having obtained from Parliament the imposition of sixpence per pound upon foreign wool imported. Consequent on the anticipated change in the currency, arising from the passing of Peel's Act for the resumption of cash payments, the prices of stuffs fell considerably. Hence the manufacturers were compelled to lower the wages of their workpeople; and at a meeting held at Bradford the following rates of wages were fixed:—

CLASS OF GOODS.				HANKS.	PER PIECE.	
					s.	d.
40	set	Wildbores	.. .. .	60	4	0
44	„	do.	.. .. .	62	4	9
44	„	do.	.. .. .	70	5	3
46	„	do.	.. .. .	74	5	6
48	„	do.	.. .. .	78	6	6
50	„	do.	.. .. .	84	7	6
52	„	do.	.. .. .	86	8	6
40	set	Plainbacks	.. .. .	64	4	6
44	„	do.	.. .. .	72	5	6
46	„	do.	.. .. .	80	6	6
48	„	do.	.. .. .	82	7	6
50	„	do.	.. .. .	84	7	6
52	„	do.	.. .. .	86	8	0
9	gate	Calimancoes	ribbed ..	50	4	0
9	„	do.	plain ..	50	4	0
10	„	do.	ribbed ..	60	4	6
10	„	do.	plain ..	60	4	6

Of these three descriptions of stuffs made at Bradford,

plainbacks had become the chief article. A first-rate weaver would weave three plainbacks (forty set) a week.

Until now, Norwich continued, to use the words of an eminent authority, the only part of England where any considerable numbers of the very finest stuffs and bombazines were made. "The manufacture," he writes, "of the coarser kinds of worsteds, except camblets, has been transferred in a great measure into Yorkshire. Norwich is also engaged extensively in the trade of silk shawls and other articles in which no worsted is used whatever. Still, however, the worsted manufacturers of Norwich may be considered as in a flourishing state. The number of looms employed in worsted at the present time (1818) may be estimated at ten thousand, half of which weave camblets, calimancoes, and other stuffs, and the other half bombazines, narrow and broad. The former are chiefly for home consumption; the latter for the Spanish market. By far the greater part of the worsted yarn employed at Norwich is supplied by machine spinners from the worsted mills of Lancashire, Yorkshire, and Durham. But some yarn still continues to be spun in the old manner by the running wheel in Suffolk, Essex, Hertfordshire, and Cambridgeshire. In Norfolk alone, the use of the distaff still remains."\*

About the year 1819, a new silk and worsted article was introduced called Norwich crape, invented by Mr. Francis, a manufacturer in Norwich. This article was different to a bombazine though formed of silk and worsted, being what is technically termed 'tamet woven,' that is with no 'wale,' and both sides were alike. The quantity made of this article for some years was sufficient to employ the bulk of the silk and worsted weavers of the city, and it retained its repute for ladies' dresses for a considerable time. In fact, it was so generally adopted as an article of female dress, as to completely supersede the use of coloured bombazines which had been hitherto in great favour in the regions of fashion.† The

\* Rees' Cyclopædia, Article, "Worsted Manufacture."

† Evidence of Mr. William Stark, taken by J. H. Mitchell, Esq., one of the Commissioners appointed to investigate the condition of hand-loom weavers.



Norwich crapes were woven in the grey, afterwards dyed in colours, and so dressed that the best sorts would vie with an endless variety of richest satin.

But Norwich was not destined long to enjoy exclusively the benefits of this new manufacture, for in the latter part of the year 1819, both it and bombazine were introduced into the Halifax market by Messrs. James Akroyd and Son. Fresh vigour had been infused into the trade of that town, and it had greatly increased during the last two or three years.

Bradford, however, had now become, without dispute, the centre and principal seat of the stuff trade in the kingdom. In its market were sold nearly every variety of worsted fabric made in the West-Riding, but especially plain ones, as contradistinguished from the figured kinds. The rising greatness of Bradford had been augmented by the decline of its neighbours' prosperity; for instance, the business formerly transacted at Wakefield Tammy Hall, had in a great measure, been transferred to Bradford, and Wakefield had gradually declined as a centre of the manufacture. The manufacturers of Keighley, Haworth, and Colne, began to resort to the Bradford Piece Hall instead of that of Halifax, so that even then manifestations began to be observed of that current which, at a later period, has drawn nearly the whole of the worsted business to Bradford.

Darlington had risen also to be a place of consequence for the spinning of worsted yarn, in which operations, to some extent, were carried on by Messrs. Pease and also by Messrs. Backhouse. The worsted business is mentioned (page 255) as being established at Darlington in 1738, (if not earlier,) and spinning worsted by machinery there, may be dated from 1796. Messrs. Pease were supplied with spinning machines by a person named Buck, of Settle. In the early part of the century a considerable number of tammies were woven at Darlington, but the chief portion of the yarn spun there was sent as 'chains' to the Exeter market to form serges, and also to Stirling and its neighbourhood for the tartan trade. There was also a carpet manufacture at Darlington which consumed worsted yarn.

Referring to that safe guide, the account of the drawback on soap used in the worsted manufacture, it is seen that the total amount, in the year 1820, reaches, for the West-Riding of Yorkshire, and part of Lancashire, to the large sum of £10,897 9s. 1d., more than double that for the year 1810; shewing, that in the intervening ten years the manufacture had, in extent and value, doubled itself. By comparing the following tabular statement with the one at page 370, it is apparent that in some districts the increase had been enormous.

			£	s.	d.
Bingley District	..	..	849	2	1
Burnley and Colne District	..	..	649	4	9
Bradford	do.	..	3329	8	6
Halifax	do.	..	2699	6	0
Huddersfield	do.	..	750	15	1
Dewsbury	do.	..	125	6	5
Leeds	do.	..	312	8	2
Otley	do.	..	453	8	10
Keighley	do.	..	1395	7	0
Skipton*	do.	..	172	9	6
Wakefield	do.	..	160	12	9
			<hr/>		
			£10,897	9	1†
			<hr/>		

Deducting the amount of drawback for the Lancashire district, it is evident that the value of the manufacture of stuffs in the West-Riding reached, at this period, four millions sterling, and began to develop the gigantic proportions, which it has assumed at the present time.

The following particulars will furnish the rate of increase or decrease of the manufacture of the several *towns* in the

\* Addingham, which, in the former statements formed, along with Skipton, a district, is not included in the above one, because the worsted had there been superseded by the cotton manufacture. In 1810, Messrs. Cunliffe and Co., of that place, obtained a drawback of £156; in 1815, Messrs. Pullan, (who had succeeded them) £93, but in 1820, the amount claimed, in respect of Addingham, only reached £11.

† The "York Collection" is not in this return, but the drawback in that district was insignificant.

West-Riding, by exhibiting the amount of drawback obtained by the manufacturers in them:—

	1810	1815	1820
	£	£	£
Bradford ..	851	1485	2411
Haworth ..	382	250	330
Leeds ..	353	199	254
Halifax ..	256	278	724
Keighley ..	199	514	848
Bingley ..	159	108	333
Skipton ..	118	197	160
Wakefield ..	111	60	144
Otley ..	3	5	102

On looking over this list one is struck with the rapid and remarkable increase in the stuff trade of Bradford, which in ten years had become nearly trebled, and was also three times the amount of that carried on in any other town in the Riding. Leeds and Haworth, especially the latter, had much declined in the scale. Halifax and Keighley had greatly extended their operations.

Many additions were made to the worsted fabrics of the North, in the year 1822, by the establishment of the Norwich manufacture of camblets, damasks, and other worsted stuffs in Halifax. Messrs. James Akroyd and Son commenced making camblets to the order of the East-India Company. According to the testimony of one engaged in their production, there were three varieties, namely, the lowest quality, which was distinguished by a double S being sewed in the piece; the next quality had one S to distinguish it; and the third or best had the letter D put upon the piece, which was made of double warp and weft, thirty-two inches wide, and fifty-five yards long. All the kinds had a specified number of threads of warp and weft to the inch, were made of a certain weight, and in case any of these conditions were not strictly fulfilled, the Company refused to take them.

Damasks, afterwards so important an article in the industrial products of Halifax, owe their introduction to Mr.



James Akroyd, Jun., of Old Lane, Halifax, who employed a skilled person to obtain the requisite information as to their make from Norwich, and thus began the Halifax damask trade, which has, upon a very extensive scale, been since carried out by the firm of Messrs. James Akroyd and Son. These damasks were, at the first, made by Mr. Akroyd of double warp with a twenty-one reed, (that is twenty-one reeds or dents in an inch,) and contained one hundred and sixty hanks of weft in the piece, which measured twenty-seven inches in breadth, and cost in weaving thirty-five shillings. Of course they were woven with a drawboy, as the Jacquard engine had not come into use, and a man assisted by a drawboy could weave a piece a week. At first, until the weavers became accustomed to the work, the drawboys were paid by Mr. Akroyd, their wages being about five shillings a week, but afterwards when the weavers became skilled this practice was discontinued, whereupon the workmen struck for an advance of wages. The fancy weavers, in those days, were often turning out on the score of wages, though their earnings were so abundant. We sent, says my informant, an upholsterer, to obtain from Messrs. Mann, of Bradford, merchants, the pattern for these damasks, and to this day it is called 'number one.'

Messrs. Akroyd also began at this time to weave 'taborines' as they were termed, that is tab moreens, a lower quality of moreen and made in an unscoured state. They also made a considerable number of fancy russells.

The worsted fancy trade now flourished greatly in Halifax. Its looms brought forth in innumerable variety, and of great beauty of design and brilliancy of colour, figured stuffs, both for dresses and furniture, some woven with the treadle alone, some with the dobby, and some with the drawboy. Pattern books are still extant, which would astonish some of our modern manufacturers. One of these, which has been inspected by a competent judge, would, even in this advanced state of textile art, be considered a treasury of beautiful design and admixture of colour; and while much is spoken and written respecting our having recourse to the French

models, it might be advisable to take some lessons from these, to use the expression, *antique* patterns. They unmistakeably prove the high state of the weaving art in Halifax at this period. Some of the patterns alluded to are composed of worsted and silk, of beautiful contrast and elegant design. In a previous page the origin of the dobby fabric in Halifax has been mentioned. This article, at first, was made of a small figure varying from eight to sixteen threads of weft in breadth, but now the figures were woven much larger, even in some instances taking up in breadth seventy-two threads of weft. Dobbies were now again in much request and fetched good prices.

Poplins also, which had been to some extent made in Norwich, in imitation of the Irish texture, had now become one of the articles produced in Manchester, and the surrounding district. Formed of silk warp and worsted weft, the latter was produced partly by hand-spinning in the South of England for the better sorts of these poplins, and partly from the Yorkshire frames for the cheaper kinds. To give the article the corded appearance which it bears, the yarn was spun exceedingly hard, and when put on the bobbins was then steamed to set the wool and take out the curl, so as to prevent the pieces from shrinking when woven.\* They were made both figured and plain, and were a beautiful texture, the warp or silk, being thrown on the face, formed the figure.

Keeping pace with the demand for fine fabrics, the worsted spinners of Bradford employed every means both as respects machinery and choice of wool, to improve their productions. For some time the fine qualities of yarn had been spun from South Down and half-bred wool. For the finest sorts of yarn, merino wool was also used in some quantity, and even a portion of Saxony wool. All these descriptions of wool being of shorter fibre than formerly employed in the worsted trade, had now, from the improved methods of preparing and spinning, become important materials of consumption in the stuff business.

\* Communicated by Mr. John Anderton, Manufacturer, Bradford.



With the production of this improved class of yarn, which, however, could only be spun by those who possessed the newest and best machinery, an extensive demand sprung up. In 1820-21, a large quantity of worsted yarn of fine quality was required in the Huddersfield and Manchester markets, for the purpose of weaving plaids for dresses. The warp was formed of cotton, and the weft of worsted, and in honor of the Princess Caroline, were termed 'Caroline plaids.' These were much in fashion, and were woven three-quarters wide, and about thirty-two yards in length, sold for two shillings and sixpence a yard. Huddersfield district also consumed a large amount of fine worsted yarn, spun at Bradford from South Down and merino wool, in the making of vestings, which had grown to be a lucrative, and staple trade in that part.

Nor did the demand increase only for the best qualities of yarn, for there was also a brisk sale of that adapted for the coarser branches of the tartan manufacture, for which the yarn chiefly went from the West-Riding to Stirling, Bannockburn, &c. The warps for the tartan plaid were made from twofold yarn spun to thirties, and the weft consisted of yarn spun to eighteens. Large quantities of yarn to form the warps of Exeter serges were likewise spun in Yorkshire.

Also the carpet manufacture had been of late greatly extended in various places in England, (especially in the town of Kidderminster.) Very large quantities of warps for carpets were made in the West-Riding, and furnished an important item of demand.

Though the tax on the importation of foreign wool undoubtedly weighed heavier upon the cloth department, and very seriously depressed it, yet such an impost also adversely influenced the worsted branch, chiefly by keeping up at home the high price of wool, so that both the cloth and worsted makers were, although not in an equal degree, both desirous to obtain the repeal of the obnoxious tax. Since 1819, the export of cloth had, from the high price of the material, been greatly restricted, and in a lesser degree likewise that of stuffs in value.



The relative decrease is thus shewn in a statement which was published by the manufacturers :—\*

YEAR.	MADE FROM SHORT WOOL.	FROM LONG AND SHORT MIXED.	FROM LONG WOOL.
	£	£	£
1819	5,829,573	614,532	2,603,854
1820	4,361,334	391,972	2,146,381
1821	3,742,059	328,180	2,208,925

Thus it is apparent, that in 1819 the export of cloth amounted to nearly double that of stuffs made both solely from long wool, and also from long and short wool mixed (such as serges, &c.) and that in two years the decline in the foreign trade in cloths reached two millions sterling, whilst there had also been a fall in the like interval of half a million in the stuff department. The latter exports, however, (including serges, &c.) in 1821, stood within about a million sterling of that of cloth.

Such an incubus as this tax upon their industry could not be permitted by the manufacturers without an energetic effort to rid themselves of it. Accordingly both the woollen and worsted interests heartily co-operated and bestirred themselves to obtain the repeal of the impost, and during the years 1819-20 vigorous measures for the purpose were adopted. Deputies from the wool manufacturing districts of the kingdom assembled in London, and held on the 8th December, 1819, a meeting, which was attended by Messrs. Richard Fawcett and Matthew Thompson, Bradford; Mr. Jonathan Akroyd, Halifax; and Mr. Harvey, Norwich; representing the worsted interests, when it was resolved that a deputation should wait upon His Majesty's Ministers and impress upon their minds the injurious effects of the tax. The deputation,

\* This is extracted from Bischoff, vol. 2, page 16. Without vouching for its accuracy, (because when compared with trustworthy authorities the amounts seem too high) it is here given to exhibit the view of the question taken by the manufacturers, and especially to shew the relative proportion which the long and short wool manufacture (that is of serges, bookings, baizes, &c.) bore to the pure worsted trade. It will be seen to be a small proportion.

however, failed in their object. Early next year the agitation was renewed with redoubled energy, and a Committee formed in London to superintend the proceedings. Petitions from all wool-manufacturing parts of the kingdom, praying for the repeal, were presented to Parliament, but without success; for on a motion to that effect made by Lord Milton and seconded by Mr. Stuart Wortley, it was strenuously opposed by the Government, and lost by a large majority. Nothing daunted, in the early part of the year 1821 the manufacturers of wool began to take energetic steps to obtain the removal of the wool tax, when Ministers being convinced that the powerful combination of the wool-manufacturing interests of the kingdom would occasion them much annoyance, practised a most successful stratagem. When the leaders of the movement waited upon Lord Liverpool and Mr. Huskisson, they intimated that the tax would be repealed on condition that English wool was allowed to be exported. Immediately disunion arose between the long and short wool consumers, inasmuch as the latter were careless respecting the prohibition of our wool being shipped abroad, and as a choice of evils determined (with some few honourable exceptions) to desert the cause of the worsted manufacturers, who, whether justly or not, considered that the prosperity of their trade rested upon the exclusive use of English long wool.

In this state of affairs, and expecting that the exportation of English wool would be proposed, the following circular was prepared by the worsted manufacturers of England and forwarded to the members of both Houses of Parliament:—

“ON THE IMPORTANCE OF THE LAWS WHICH PREVENT EXPORTATION OF  
ENGLISH SHEEP AND WOOL.”

“The long wools of Lincolnshire, Kent, &c., are peculiar to Great Britain, and so far as they give employment to the country are highly valuable.

Short clothing wool can only be doubled in value by the process of manufacture, but long wool is capable of bearing so much labour that it may be increased to fifteen times its value; the lowest estimate which is made is four times its value, and upon this, which is the most unfavourable to shew the importance of long wool, the following will prove the increasing value of this trade to the country.

The value of stuffs and worsted goods exported is about £2,500,000, of which the labour costs about £2,000,000 sterling. The following amounts were sent to—

YEAR ENDING JAN. 5TH.	RUSSIA. £	GERMANY. £	HOLLAND. £	FLANDERS. £
1816	1,462	59,354	56,556	7,574
1817	4,722	80,244	63,241	13,326
1818	60,111	170,052	42,542	15,630
1819	126,409	245,845	45,404	29,260
1820	106,551	223,302	47,613	18,121
1821	119,607	316,119	44,992	24,714

Making the total of—

YEAR.	£	YEAR.	£
1816	124,947	1819	446,918
1817	160,633	1820	395,587
1818	290,235	1821	505,432

The long wool of Great Britain is alone wanted by those countries to enable them to manufacture stuffs by mixing it with their own coarse wool; if, therefore, the project mentioned by His Majesty's Ministers to repeal the laws which prevent the exportation of English sheep and wool should be carried into effect, the exportation of stuffs, as well as all other description of goods made from worsted to those countries must inevitably be lost. It therefore becomes a matter of serious consideration, when labour is so much wanted for the lower classes, if it would be prudent to allow the exportation of a raw material capable of giving subsistence to our immense population, and to transfer it to foreign countries, who now purchase the manufactured article from Great Britain in its most perfect state."

Some points in this document are worthy of consideration, such as that the value of short clothing wool could only be doubled, whilst long wool might be increased to fifteen times its worth, and that the lowest estimate made gave four times its value; and that the value of 'stuffs and worsted goods' (that is including serges, &c.,) exported amounted to £2,500,000 of which the labour, &c., is stated to be four times the amount of the material. There is also in the circular an allusion (not here quoted) made to the bread tax, which is exceedingly apt in meeting the argument of the agriculturists, who loudly denounced as iniquitous a law which prohibited them from selling their wool in the best market.

Owing to the disunion between the clothiers and stuff makers respecting the proposal of the Chancellor of the Exchequer, the repeal of the tax was not pressed during the year 1823, and Ministers, in order to obtain the unequivocal assent of short wool manufacturers, delayed bringing before Parliament any measure on the subject.



The London Committee having addressed circulars to the manufacturing districts inquiring whether they assented to or dissented from the proposal of Ministers, answers were received from the following places in favour of the proposal:—London, Gloucestershire, Wiltshire, Somersetshire, Huddersfield, Saddleworth, and what was more important from the Leeds clothing trade; and against, from Bradford, Halifax, Norwich, Leicester, and Leeds worsted trade. At once the London Committee intimated to Ministers that the manufacturers generally acquiesced in their proposal.

The worsted manufacturers viewing with alarm the attitude assumed by the clothiers, began to prepare for the conflict expected in Parliament the ensuing year. A large meeting of the merchants, manufacturers, and others of the town and neighbourhood of Bradford, was held 2nd June, 1823, for the purpose of opposing the repeal of the law against the exportation of wool, Mr. Richard Fawcett, in the chair, when it was the unanimous opinion of the meeting “that a free export of British wool would be destructive to the trade of Bradford and the neighbourhood,” and that the great increase of trade in this quarter arose from the protection enjoyed by them, preventing rivalry in the foreign market. A like meeting being convened at Leeds of those interested in the long wool trade, it was resolved, that the exportation of our wool would be ruinous to a very numerous population in that town and neighbourhood, and destructive of the worsted trade.

Not following the example of Lord Milton, the Honourable James Stuart Wortley had, throughout the contest, remained true to the worsted manufacturers, and energetically opposed, step by step, the intention of Government to repeal the laws prohibiting the exportation of wool. A long and interesting correspondence on the subject took place between Mr. Wortley and Mr. Richard Fawcett, who then took the most prominent part in the business, and had been appointed Chairman of the Bradford Committee. And here let me pause to pay a tribute to the memory of this gentleman. During the preceding quarter of a century he had been intimately connected with the trade of Bradford, and was

the largest spinner and manufacturer in the district, as will be observed on reference to the drawback returns. He had ever the interests of the worsted trade at heart, watched over them with solicitude; and above all was kind and considerate in his conduct towards his workpeople. A deputation from Bradford, headed by Mr. Fawcett, proceeded to London to organize an opposition to the exportation of wool, and prepared a 'case' for distribution among the members of Parliament, from which the following statements are worthy of extract.—After premising that the manufactures of wool are divided into two distinct branches, the short wool or clothing branch, and the long wool or worsted manufacture, it proceeds thus:—"Worsted stuffs, properly so called, consist of long wool only, but the important articles of long ells, bockings, baizes, &c., are composed partly of wool of the longest staple and partly of wool of shorter staple. That long wool used for worsted fabrics and for the warps of long ells, &c., was exclusively the produce of sheep the breed of this country, only grown in certain parts. That the foreigner not having any wool of which warp can be made, but having an abundance of that of which weft was composed, wished only to import long wool. That not less than 700,000 persons were dependent for support upon the manufacture of this wool, and that the grower of it was better remunerated for his produce than any other, as might be ascertained by an enquiry into the prices of long wool as compared with short, from 1817 to 1823, and by the undoubted fact, that where possible, the farmers were substituting long woolled sheep." The stuff manufacturers in their 'case' also allege that "during the last eventful thirty years the manufacture of long wool had never languished; the operative hands had been fully employed; and the master manufacturer had been enabled to give a rate of wages sufficient to afford to the labourer the means of subsistence, even in times of scarcity." Some of these assertions must, however, be taken with much allowance. Undoubtedly, on the whole, the worsted trade had been for the last quarter of a century in a healthy state, but to say that it had in that time never *languished*, nor the operatives been unemployed, were bold assertions.

At length, on the 26th of March, 1824, the momentous crisis arrived. The Chancellor of the Exchequer proposed to the House of Commons a Bill for repealing the wool tax, and also the prohibition against the export of wool, declaring that foreign wool might be imported upon payment of one penny per pound, and English wool exported subject to a duty of twopence per pound, and yarn upon payment of a duty of sixteen per cent. The Committee of worsted spinners and long wool manufacturers, who sat at Henderson's Hotel, London, considered this latter duty very objectionable, and tending to promote the exportation of the material in its raw state.\* The Bill was energetically opposed by Mr. Stuart Wortley, member for Yorkshire, who strongly objected that long wool,

\* The Committee prepared estimates of the cost of productions of certain fabrics (the two first most likely being 'vestings') which disclose some particulars worthy of record:—for instance,

One yard of worsted stuff, mixed with cotton and silk, cost as follows:—

	£	s.	d.
$3\frac{1}{2}$ oz. of worsted .. ..	0	1	0
$\frac{1}{4}$ oz. of silk .. ..	0	0	9
$1\frac{3}{4}$ oz. of cotton .. ..	0	0	8
Weaving and finishing .. ..	0	1	10
	<hr/>		
	0	4	3

One yard of worsted stuff mixed with cotton:—

	£	s.	d.
$4\frac{1}{2}$ oz. of worsted .. ..	0	1	6
1 oz. of cotton .. ..	0	0	$6\frac{1}{2}$
Weaving and finishing .. ..	0	1	10
	<hr/>		
	0	3	$10\frac{1}{2}$

Long ells, an article which formed the chief manufacture of Devonshire, cost in production, the piece containing in length of twenty-five yards, thirty inches wide, weight twelve pounds, the following:—

	£	s.	d.
Worsted warp, $4\frac{1}{4}$ lbs. at 2/2	0	9	2
Short wool weft, $8\frac{1}{2}$ lbs. at 1/3	0	10	$7\frac{1}{2}$
Weaving and finishing .. ..	0	4	5
	<hr/>		
	1	4	$2\frac{1}{2}$

In bockings and some other articles made in Yorkshire and Lancashire in considerable quantities, only one-fifth long wool, and four-fifths short wool is used.



which was the peculiar growth of this country, should be exported in such a way as would enable the foreign manufacturer to compete with us successfully.\* Ministers brought forward their measure again on the 22nd of May, when the duty on the importation of foreign wool was lowered to one penny without a division, and the exportation of English wool permitted, when, upon a division, there appeared one hundred and eighty votes against twenty. Afterwards, in committee, the duty originally proposed of twopence in the pound, was lowered to one penny, a strong instance of the influence of the agricultural interest in the councils of the nation, and their determination to use it for what they believed to be their own benefit. Thus, after a lapse of nearly two hundred years, our wool was again allowed to be shipped abroad.

Since then, the predictions of the worsted manufacturers of the evil effects of the measure on their prosperity, have been seen to be unfounded. This result may, in the main, be attributed to the rapid increase of our supply from Australia, which more than compensated for the loss of material arising from exportation, and also from the excellence of our machinery preventing the competition of foreigners; and partly owing to the impulse arising from several new articles of manufacture, such as merinoes, being introduced into the worsted trade.†

\* Mr. Wortley, for his services in opposing the exportation of long wool was twice invited to a Public Dinner, in Bradford. On one of the occasions, his carriage was met by an immense crowd at Laister Dyke, and drawn into the town, and then he was sumptuously entertained upon a large scale in the Piece Hall.

† “ From a very early period the woollen manufacture has been the object of the especial attention of the English Government. Originally, indeed the freest exportation of British wool was allowed; but, in 1660, it was strictly prohibited, and this law remained in force until 1825. The prohibition was grounded upon the belief, that the long-staple or combing wool of England is superior, for some manufacturing purposes, to that of any other country, and that by keeping the raw material at home we should secure to ourselves the exclusive manufacture of certain fabrics. The mistaken policy of this selfish system has been rendered fully apparent since its abandonment. No sooner were the French manufacturers able to procure the combing wool of England, than they set their ingenuity to work to profit fully from the concession, and produced new stuffs from English wool, superior to any that we had ever produced in this country. Thus stimulated, our manufacturers also applied themselves to the discovery of superior processes, and in the

As may be justly inferred, from the introduction of so many new fabrics into the worsted industry of the North, it was in a very thriving vigorous condition. The stuff markets, altogether, during the years 1820-1-2-3-4 continued steady, and the demand progressive. In the latter year, especially, the stuff business exhibited proofs of great prosperity, which continued during the forepart of the year 1825, so as to cause the festival of Bishop Blaize at Bradford, in February, to be celebrated with unusual pomp.

At this conjuncture, the combers, who for some time had been labouring to obtain an advance of wages, and an equalization of the rates given for combing the different descriptions of wool, now concluded that the period had arrived to press their demands. Since the consumption of fine wool in the worsted trade had become considerable, an important change had occurred in the combing department, and many anomalies in the rates of wages arisen. The weavers also were discontented with their earnings, which they asserted were not in proportion to the profits of the manufacturers; and the operations of the power-loom were daily encroaching upon the labours of the hand-loom weavers, rendering them less needful, and depreciating the rate of wages. These elements of discontent among the combers and weavers, at last produced a strike or turn-out in the worsted trade without parallel, and though at the commencement of the conflict Bradford alone suffered, the mischief afterwards extended throughout the whole of the worsted districts of the West-Riding. In August, 1824, the combers had formed an association for the ostensible purpose of guarding their

course of a few years have produced merinos and other stuffs in every respect equal to the fabrics of France. By this means our stuff manufacture has received an important impetus. In the five years from 1820 to 1824, while the prohibition to export English wool was in force, the average annual shipments of that description of woollen goods amounted to 1,064,441 pieces. In the five years following, during which the removal of the restriction occurred, the average annual export of such goods amounted to 1,228,239 pieces; and in the next quinquennial period, from 1830 to 1834, the average rose to 1,505,993 pieces; thus furnishing a satisfactory answer to those persons who predicted, as the necessary consequence of a departure from a restrictive policy, the absolute ruin of that branch of our export trade.”—Porter’s *Progress of the Nation*, pp. 189 and 90.



interests, and soon afterwards the weavers consented to join them in compelling the masters to assent to their demands. These workmen, in number, constituted an exceedingly formidable body according to a minute which the Bradford masters, when the strike commenced, entered upon their proceedings:—"It has been ascertained, from official documents, that the wool-combers within six miles of Bradford, amounted last year (1824) to about six thousand; since then their numbers have increased, and it is estimated there are now within that distance between seven and eight thousand; and within the same distance the weavers are estimated at three times the number of combers."\* Of these it may safely be asserted, that at one time during the strike, twenty thousand were unemployed.

The first open act of the workmen, who had previously formed a Union among themselves, showed itself in their demanding a conference with the masters. Accordingly, on Monday, the 6th of June, 1825, the masters assembled at the Sun Inn, Bradford, to the number of about thirty, and chose Mr. Matthew Thompson as chairman. The combers and weavers were represented by two delegates:—John Tester, who afterwards played so large a part in the strike, attended on behalf of the combers. They required for "combing low sorts of wool, such as britch, and low warp and weft, an advance of a farthing, and a halfpenny per pound where fine wool was not combed; and a halfpenny per pound where the low sorts were broken out of the finer fleeces." This advance would have amounted to two or three shillings a week upon the low sorts. The combers were not so specific in their other demands, leaving the question open, and merely requiring, for those sorts which were paid for at a low rate, an advance. The weavers put their requisition in a more precise form. For broad plainbacks, set 42, for which the wages were seven shillings and threepence, they required an advance to nine shillings; those set 50, from thirteen shillings to fifteen

\* The masters at the commencement of the contest appointed a Committee to watch their interests, and also a Solicitor. All the proceedings were entered in a Minute Book, from which the above is extracted.



shillings. Common plainbacks, set 36, an advance from three shillings to four shillings; set 44, from four shillings and sixpence to six shillings; set 56, where the sum of ten shillings was paid, they required eleven shillings and sixpence. Wildbores, set 44, an advance from four shillings to six shillings and threepence; set 56, from ten shillings to eleven shillings and sixpence. Common dobbies, set 36, an advance from three shillings and ninepence to five shillings; set 44, from six shillings and threepence to eight shillings and sixpence. Moreens, set 39, from three shillings to three shillings and sixpence; set 50, present rate seven shillings, no advance required. It was most satisfactorily elicited, and even admitted by Tester, that a comber could earn twenty-three shillings a week, and that prices had *nominally* never been higher; but the workmen alleged that wool had become more difficult to comb, being of higher quality. While this is being penned an inquiry has been made of a most respectable person, who, as a comber took part in the strike, and he states that his earnings averaged sixpence an hour, so that for only ten hours each day, he could earn thirty shillings a week. Undoubtedly he was an exceedingly strong and skilled workman, employed upon fine wool; but his statement is conclusive that the combers were receiving excellent wages, and that there existed no just grounds of complaint. To turn to the weavers:—A moderate workman could earn from ten to twelve shillings per week, but on some fabrics up to twenty shillings. An advance had not long previous been made to the weavers, but they complained that this advance had not been general, and that a difference existed between the rates given by different employers to the amount of from one shilling to one shilling and sixpence.

As their demands were not acceded to at the conference, the combers next day, (Tuesday, 7th June) struck work against three firms in Bradford, Messrs. John Wroe and Sons, Messrs. Margerison and Peckover, and Messrs. Leach and Cousen. The following day the masters, to the number of fifty, held a meeting at the Sun Inn, Bradford, to consult on this emergency, when it was unanimously resolved, that,—It appeared

from evidence, the prices for combing were higher than they had been for the last ten or twenty years, and provisions more reasonable than had often been the case during that period, and that the workmen's request was unreasonable. The resolution was somewhat modified respecting the weavers, but the meeting pledged itself not to employ any comber or weaver belonging to the *Union*.\* Thus the rupture became complete, and henceforward for the next twenty-two weeks a struggle commenced, which in its magnitude, the loss entailed, and calamitous results, is almost without parallel in the records of industry. The 'turn-outs' met weekly at Fair-weather Green to listen to the reports and speeches of their leaders, who declared, that until the demands of the workmen, to the full extent, met with compliance, they would never return to their work, and this threat, it seemed at the time would be carried into effect, inasmuch as numerous contributions poured in from all parts of the country. Delegates were sent to the principal manufacturing towns of the kingdom to induce the artisans to assist their Bradford fellows in resisting what was termed the oppression of the masters. After many fruitless conferences between the masters and the men, the former determined upon taking a very decided step, for the purpose of breaking up the Union, and at a meeting resolved to stop their mills on the 5th or 6th of August following. There were present thirty-nine masters, thirty-three of whom voted for the stoppage, and six against it.

To justify the measures they had adopted, the masters published a kind of manifesto, which is printed below, and contains many important particulars. It is seen that plain-backs of low quality were the staple goods of Bradford at this season; that the rate allowed for weaving them had been lowered since 1819; and that wages in Bradford were higher than in the neighbouring towns. But the most interesting portion of this manifesto, consists of the statement, that weaving by power-looms had come into competition with

\* In a Pamphlet entitled "Character, Object, and Effects of Trades' Unions," (London, 1834,) there is an account of the proceedings on the initiation of members into the Bradford Union, which gives an awful oath taken by the members.

hand-loom weaving, and that the work by the former method progressively increased, and was of better quality and much cheaper.

At a meeting of the worsted spinners and manufacturers held 12th August, 1825: Resolved, that the pieces principally manufactured in Bradford and the neighbourhood are 44 sets, plainbacks, 72 hanks; for weaving which the wages paid in Bradford are five shillings, and in Halifax, Keighley, Bingley, Thornton, Clayton, and other neighbouring places four shillings and sixpence, but the wages demanded are six shillings. There is difficulty in particularizing every description of pieces manufactured here in consequence of a set containing more or less of weft; but the wages paid in Bradford for weaving all other kinds are certainly higher in the same proportion than in the neighbouring towns and villages.

That there is a powerful competition between hand and power weaving progressively increasing in Bradford and the neighbouring towns; and it may be confidently asserted that goods woven by power are superior in every respect to those woven by the hand. The subjoined contrasted statement will, at once, shew the economy and consequent advantage of power weaving.

One loom will weave 5 pieces per week of 44 sets plainbacks, 72 hanks:—

	£	s.	d.
Wages for weaving them . .	0	11	3
Power and Room per week . .	0	1	6
Sizing, Looming, Winding, and } Interest of Capital per week . . }	0	2	6
	<hr/>		
	0	15	3
	<hr/>		
	£	s.	d.
Wages paid in Bradford for weaving } 5 pieces by hand are . . . }	1	5	0
Wages demanded would be . .	1	10	0
	<hr/>		

Hence it appears that the prices demanded for weaving by the hand the pieces instanced, are double the cost of weaving than by power, and the saving in weaving pieces by power of a superior quality is still greater.

That the combing wages paid in Bradford and the immediate neighbourhood are confessedly as high as to some sorts of wool and higher as to other sorts, than the wages paid elsewhere. In consequence of which there is a great influx of strangers from all parts of England and Ireland. But it would be difficult to give a comparison of prices for different sorts, particularly for those for combing which above sixpence per pound is paid, and as it would be impossible to lay down a scale of wages for those sorts, the prices must, as to them, always be a matter of regulation between the masters and combers, but the combers uniformly acknowledge that they realize better wages from the finer than the inferior sorts.

Before the middle of September there were unmis- takeable signs of the combination not being so strong as previously. The subscriptions began to fall off; and the



stuff markets being dull beyond precedent, the employers were not desirous of extending their operations. The 'turn-outs' had derived very efficient support from the combers and weavers of Halifax, Keighley, and the other neighbouring towns, and to cut off these supplies the Bradford masters held a meeting, at which it was resolved to send circulars to the spinners and manufacturers in those towns requesting them to adopt energetic measures to crush the Union. In consequence, meetings of employers were held at Halifax\* and Keighley† to adopt measures against the Union, and resolutions were passed pledging the meetings to support the Bradford masters in the struggle, and turn off their work any operatives who could be discovered assisting in any manner the Union with funds. Fortunately the rupture between the Halifax and Keighley masters and men did not

\* The resolutions of the Halifax meeting (Jonathan Akroyd, Esq., in the chair) were signed by James Akroyd and Son; John Holland; Stansfeld, Briggs, and Stansfeld; Edmondson and Co.; James Akroyd; Richard Whitworth; John Holdsworth and Co.; John Crosley and Sons; Henry Emmett; R. G. Aked; J. Buckley; Robert Emmett; Joseph Holmes and Son; George Holdsworth; Job Aspinall; Isaac Thwaite; Samuel Wood; Richard Ayrton; James Aspinall; Jonathan Farrar; Samuel Hall; Timothy Wood, Jun.; Joseph Riley; James Fawcett; Samuel Sowden; James Hiley; Samuel Smith; William Thomas; John Garnett; Thomas Murgatroyd; Ely Walker and Sons; John Midgley; Buck and Kershaws; William Wrigglesworth Jun.; Thomas Mitchell; James Holdsworth; Thomas Riley; John Isles; John Holdsworth; Nathan Isles; William Haigh; J. and J. Baldwin; and Joseph Priestley.

† A meeting of the worsted spinners and manufacturers of Keighley and neighbourhood, was convened on the 6th of September, to take into consideration the circular of the Bradford masters, at which a resolution was passed determining to turn off all workpeople who were in the combers' and weavers' Union, and also all those who could be ascertained to support the Union in any manner whatever. This resolution was signed by the following parties:—W. Sugden; J. Greenwood; G. Townend and Brothers; J. Craven; H. Clapham and Sons; J. Mitchell; T. Pearson and Sons; W. Smith and Son; R. Robinson; R. Smith; I. Sharp; J. Illingworth and Co.; T. Sugden and Son; W. Haggas; W. and J. Sharp; J. W. Maud; J. Butterfield; R. Clough; W. Lund; P. Hartley and Son; I. Brigg; D. Butterfield; W. Barrett; J. Greenwood; G. Tweedy; Turner and Clough; Nicholls and Maud; T. Jowett; E. Berwick; R. Sharp; J. Townend; W. Robinson; G. Robinson; I. Sutcliff; Jonas Sutcliff; W. Heaton; J. Ackroyd; W. Wright; J. Feather; J. Pighills; J. Ogden; R. Ogden; J. Feather; N. Ogden; J. Hanson; J. Clough; J. Anderton; J. Spence; J. Whitley; T. Ackroyd and Co.; A. Tempest; B. Smith; Waley and Ambler; G. Anderton; and J. Barker.

proceed to the same length as at Bradford, though many of the hands were out of employment.

At last the Bradford workmen finding that their funds were failing, and that the state of the trade would not permit the masters to advance wages, began to yield. An interview took place, on Saturday, the 5th of November, between some of the workmen and Messrs. John Wood and John Rand, which, owing to the conciliatory conduct of the masters, resulted in seventy combers of the best character obtaining work at Mr. Wood's factory, and on the ensuing Monday there was a general resumption of labour to the extent of the masters' wants. Thus after a protracted struggle of twenty-two weeks, the workmen, as is usual in these cases, had to succumb, and under circumstances less favourable than when it commenced; for the trade of the district had become so shaken, and the pressure of the times so great, that for the ensuing twelve months the workmen endured many privations.\*

Immediately after the close of this unfortunate contest, an eminent writer, the late Edward Baines, wrote an article in the *Leeds Mercury*, wherein he estimated the contributions raised for the support of the 'turn-outs' to reach at least £20,000, and the difference between that sum and the wages lost by them whilst in a state of idleness, at other £20,000, in all £40,000. This is evidently a very moderate estimate; but who shall calculate the loss to the employers? It was immense in its immediate effects in the disarrangement of the concerns of trade. Nor must it, in this estimate, be forgotten that very many of the retail tradesmen of the district were ruined. Indeed the calamity spread to all around.†

\* As one of the results of this strike, attention was again directed to combing machines, and from the Bradford and Wakefield Chronicle, (October, 1825) the following paragraph on the subject is extracted:—"The machines invented by Messrs. Dawson and Lister for combing wool, and for which they have obtained a Patent, are now getting into active operation. We understand they answer uncommonly well, and that the yarn produced from the wool combed by them, is, if any thing, superior to that manufactured from wool combed by hand labour."

† The chief portion of the information respecting this strike has been extracted from the Bradford and Wakefield Chronicle, a newspaper published by Messrs. Stanfield, of Bradford, in 1825.

In closing the narrative of this memorable strike, it is but justice to the workmen concerned in it to state, that throughout they conducted it in a peaceable and orderly manner. Unlike the disreputable scenes which have so frequently been enacted on similar occasions, the Bradford strike was not characterised by a single outrage or breach of the peace, so far as it has come to the writer's knowledge. And whilst before alluding to the immense loss arising to the masters from the stoppage of their works, it must be noticed that very many manufacturers were saved from ruin owing to the strike restricting their operations within the bounds of prudence, beyond which, in that extraordinary year of speculation, when the price of wool stood so high, they might otherwise have been tempted to trespass. The misfortune fell heaviest upon those extensive spinners, who, trusting to an uninterrupted trade, had collected a large quantity of wool at the enormous rates quoted in the early part of 1825, and who suffered severely from the fall in price which afterwards occurred.

Reviewing the stuff trade throughout the year 1825:—though up to July the demand continued excellent and prices high, yet afterwards sales became languid until the middle of September, when the Bradford stuff market began somewhat to recover, and the demand was not only better than it had been for several weeks, but higher prices were obtained in consequence of more foreign merchants attending the market than for some time previous. In the local newspaper of this date, it is recorded that “fancy stuffs what are called full sets, 44s, were sold at twenty-three and twenty-four shillings a piece. The price of weaving these is six shillings and sixpence,\* so that admitting the demand to be greater than in the preceding weeks, the manufacturer is still selling his goods at less even

\* Having access to the books of a large manufacturer of the best qualities of plainbacks, then the staple articles of stuffs fabricated in Bradford, the ensuing extracts give the prices charged to the merchants between the years 1819 and 1825 inclusive, and exhibit the high prices obtained in the year 1824, and up to the date of the strike. In 1819, thirty-four shillings a piece is charged; 1820, thirty-three shillings; 1821, twenty-five shillings; 1822, twenty-five shillings; 1823, twenty-four shillings; 1824, fifty shillings; and so on up to June in the succeeding year.



than prime cost." Prices afterwards began to decline, and ultimately the wool market became sensibly affected, and qualities before sold for £21 a pack only realized £17 10s. and £18. Towards the latter end of the year, trade had become exceedingly flat, especially in Bradford, where in the month of November no fewer than 3,000 persons were out of employment. The distress, chiefly confined to that town, became excessive, and public subscriptions upon a munificent scale were obtained for the alleviation of the extreme privations of the workpeople. To augment this distress, in the month of December, a complete panic spread through the trade of the West-Riding by the stoppage of several banks, especially that of Wentworth, Chaloner, and Company, which had branches in the worsted districts, and there spread ruin in every direction. Very many manufacturers possessed large accumulations of stocks when this catastrophe broke over them, and in the emergency, an application was made from Bradford to Government to advance Exchequer Bills upon security of goods, as had been granted in 1793. This was, however, refused, but in lieu thereof, the Bank of England afterwards made such advances. These were, however, clogged with so many inconvenient conditions as to render them not of any great service.

Yet, in spite of all these accumulating calamities, so rapid had been the onward progress of the worsted trade, that even comparing the results of the disastrous year 1825 with 1820, it will be found that in the interval the West-Riding stuff business had increased its proportions by two-thirds. Such an astonishing stride, more remarkable than any preceding one, indicates most distinctly the extensive capital, the numerous mills, and the great number of hands now

\* A Deputation proceeded from Bradford for the purpose of inducing the Chancellor of the Exchequer to make the required advance of Exchequer Bills, but this was refused. The Bank of England advanced some small sums to the manufacturers of Norwich, Bradford, and Huddersfield, upon the security of goods. The whole sum advanced by the Bank of England amounted only to £400,000, which was chiefly lent to Manchester. There were, during this year, no fewer than two-thousand five hundred and eighty-three bankrupts, being one thousand three hundred and seventy-five more than in the preceding year.

employed in it. The drawback account, for 1825, yields the following conclusions:—

			£	s.	d.
Bingley District	..	..	1299	0	1
Burnley and Colne District	..	..	919	18	2
Bradford	do.	..	5033	12	8
Halifax	do.	..	3294	15	7
Huddersfield	do.	..	1633	8	8
Dewsbury	do.	..	294	5	0
Leeds	do.	..	462	12	2
Otley	do.	..	921	14	2
Keighley	do.	..	1936	10	2
Skipton	do.	..	344	12	4
Wakefield	do.	..	909	14	5
			<hr/>		
			£17,050	3	5*
			<hr/>		

Pursuing the method adopted in deducing the weight of wool, and its worth when manufactured, from the amount of drawback, it is seen that the value of the manufacture in the West-Riding nearly approached seven millions sterling.† This included the yarn spun there for the Norwich, Huddersfield, Scotch, and carpet manufactures, and also such portions as had begun to be shipped to the Continent.

The town of Bradford alone furnished claimants for drawback to the amount of £3,804; Halifax had also increased its share to £1,064; and Keighley to £1,224.

And with this extension of business operations in the West-Riding, the export of stuffs kept pace, as the table on the ensuing page will fully demonstrate. It may again be necessary to mention that in the returns made to Parliament of exports, there is no distinction between *woollen* and *worsted* stuffs, and therefore the number of pieces set out in this table includes both descriptions.

\* Compiled from Porter's Tables, part 1, page 71, *et seq* :

† The declared value of the whole of our exports of all descriptions of manufactures from wool, this year amounted to £6,045,240.

## EXPORT OF WOOLLEN AND WORSTED STUFFS.

	1820	1821	1822	1823	1824	1825
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.
Russia .. ..	71,252	69,239	27,297	63,496	30,959	29,724
Sweden .. ..	20	1			20	5,201
Norway .. ..	980	775	730	875	628	1,033
Denmark .. ..	1,441	1,630	1,376	4,173	1,655	3,045
Prussia.. ..	6,144	6,031	6,146	3,992	1,513	852
Germany .. ..	205,764	206,696	275,667	321,753	360,486	332,086
Netherlands..	36,084	35,100	55,711	58,159	65,469	64,255
France .. ..		30	17	60	357	135
Portugal, A- zores, & Ma- deira.. ..	21,924	26,050	23,886	23,236	39,862	29,538
Spain & the Canaries.. ..	16,230	2,927	3,361	5,415	14,010	16,391
Gibraltar .. ..	11,827	20,503	36,168	25,358	37,364	20,987
Italy.. ..	30,864	56,173	123,275	125,399	87,915	57,210
Malta .. ..	1,451	862	1,419	1,761	747	515
Ionian Islands	167	51	49	30	20	100
Turkey & the Levant .. ..	3,629	755	400	689	2,545	1,530
Guernsey, Jersey, Al- derney, and Man .. ..	1,043	1,734	2,042	1,877	1,638	1,268
East Indies & China .. ..	211,593	204,682	169,475	219,984	165,743	184,818
New Holland	512	760	832	1,642	989	1,740
Cape of Good Hope .. ..	3,660	5,349	2,100	5,803	5,720	4,390
Other parts of Africa.. ..	678	986	1,010	1,116	1,485	2,280
British North American Colonies .. ..	15,258	16,887	22,179	21,065	34,856	30,022
British W. Indies .. ..	10,527	12,867	18,975	10,965	11,967	11,446
Foreign W. Indies .. ..	2,681	2,799	7,118	5,923	7,868	3,043
U. S. of Ame- rica.. ..	147,315	304,181	262,382	214,541	313,762	264,401
Brazil .. ..	18,909	21,380	11,260	13,713	25,204	35,508
Mexico & the States of S. America.. ..	8,941	23,888	25,571	19,108	29,621	37,290
Totals ..	828,901	1,022,342	1,078,428	1,150,133	1,242,403	1,138,808



First, the decline of the Russian stuff trade since the year 1820, will be remarked ; next, the growth of that to Germany and the Netherlands. Spain and Portugal no longer ranked among our best customers. The export to Italy, it will be observed, stood high during some of these years. In comparison, our Colonies were not such large consumers of English stuffs as formerly. The East-Indies and China still took of them to a large amount, as well as the United States of North America. It is to be particularly observed, that the German trade had become of the first importance, next the American, and then that to the East-Indies and China.

Perceiving the growth of the export of worsteds, and that their use increased abroad, and had with certainty become one of the staple articles of commerce, many foreign merchants, who previously employed agents, or obtained their supplies from consignments to them by English merchants, began to settle in the worsted districts of the West-Riding. This circumstance undoubtedly had great influence upon the prosperity of our export trade, for the foreign merchants being on the spot, could not only avail themselves of any advantages which offered in the market, but also stimulated the manufacturers to make, in the best manner, fabrics suited for the respective continental marts. While noting the settlement of foreign stuff merchants in Yorkshire, it must not be passed over, that as a body they have ever since attained a high character for the probity of their dealings and punctuality of their payments. Indeed the latter feature has become quite a characteristic in their transactions, and its universality may, in part, be accounted for by the jealous care which they have taken to prevent any suspicious foreigner settling among them, and thus obtaining an opportunity of disgracing their good name. These merchants, at the time I write, are a large and respectable colony in Bradford ; have become part and parcel of our society ; are interested in the success of our trade, and heartily seek to maintain its prosperity. To them, in seasons of depression, much has been owing ; with judicious enterprise they have, on such occasions, bought largely for the future, and thus rendered efficient aid in times of difficulty and pressure.

To return: nothing is more evident, than that of late years the export of stuffs (woollen and worsted) had been gaining ground on that of woollen cloth. To strike the eye more forcibly the following table has been drawn up:—

YEAR.	CLOTHS OF ALL SORTS. PIECES.	STUFFS, WOOLLEN, & WORSTED. PIECES.
1815	638,368	605,228
1816	467,221	593,972
1817	478,378	683,448
1818	446,872	937,944
1819	340,044	717,581
1820	288,228	828,901
1821	375,153	1,022,342
1822	419,748	1,078,428
1823	355,687	1,150,133
1824	407,154	1,242,403
1825	384,598	1,138,808

It might be supposed that the stuff trade had gained in proportion to the loss of that in cloth, and in succeeding years this proportion is much larger. During the War the shipments of cloth to the Continent were very heavy, and kept that department in a very prosperous state; but ever since the Peace a reverse had occurred, and the balance turned in favour of the stuff fabrics.

After the first shock arising from the Bank failures, the worsted trade, during the early part of 1826, remained in a very unprosperous condition, and no amendment could be quoted either in the price or demand of stuffs. A contemporary newspaper thus reports the Bradford market in the latter part of February:—"It is an unthankful duty to record week after week the state of a market once flourishing now in a state of progressive decline." And though some improvement occurred subsequently, yet the trade did not recover throughout the year from the effects of the panic.\* A strong proof of the depression existing in the worsted department, in this

\* Wool advanced in price in the latter part of the year. Farmers requiring for South Down and half-bred hog wool thirty-five shillings a tod, and Lincolnshire hog wool, which had been £10 10s. a pack, now fetched £14 or £15.

year, is afforded by contrasting the rates of wages which were now given with those of preceding years. The subjoined is a synopsis of the average weekly earnings of the several classes of operatives employed in a mill in Bradford :—\*

	1823.		1824.		1825.	1826.	
	s.	d.	s.	d.	Year of the Turn-out.	s.	d.
Weavers from 12 } to 16 years old }	12	1	9	10		7	6
Weavers from 16 } and upwards }	13	8	13	2½		10	3
Reelers of worsted yarn, women . . . . . }	10	0	12	11		9	4
Warpers of worsted yarn, women . . . . . }	12	0	12	0		12	0
	s. d.	s. d.	s. d.	s. d.		s. d.	s. d.
Hands working by the day in factories from 9 to 11 years old, chiefly girls }	2	3	3	9		2	0
Hands from 11 to 14, chiefly girls . . . . . }	3	9	6	0		3	6
Hands from 14 and upwards, women . . . . }	8	0	8	6		7	6
Overlookers . . . .	18	0	26	0		18	0
Woolsorters . . . .	18	0	24	0		26	0
	18	0	24	0		18	0

Hence it appears, that a great depreciation of wages had followed upon the calamitous strike and the bank failures.

None suffered more severely from the depression of trade than the stuff weavers. This partly arose from the competition of power loom weaving, which, as before seen, had been brought into use in the worsted factories. Notwithstanding a period approaching to fifty years had elapsed since Cartwright produced his power loom, and a quarter of

\* Porter's Tables, part 3, p. 419.



a century since it had been so improved as to promise a speedy and universal use of it, yet from one cause or another, success did not follow its adoption, and it had only a few years before the date now under consideration (1826) been to any extent employed even in the weaving of cotton. Being less adapted for the fabrication of stuffs, its adoption for that purpose was tardy. Previous to the year 1822, Mr. James Warbrick, an ingenious manufacturer in Bradford, having constructed a power loom as secretly as possible to evade any attack which might be made to destroy it, sent, in 1822, the obnoxious machine, under the impression that it would be in safety, to a mill at Shipley to be worked. But in this idea he was mistaken, for it had scarcely been put in motion ere the bell-man was sent round to give notice in the neighbouring villages of its arrival. A great number of weavers in a short time surrounded the mill and threatened the whole fabric with destruction, if the power loom were not instantly removed. It was, therefore, immediately taken down and placed in a cart under a convoy of constables, but the enraged weavers attacked and routed the constables, destroyed the loom, and dragged its roller and warp in triumph through Baildon.\* Such were the inauspicious and unwelcome scenes which accompanied the attempt to introduce power looms into this district. After this failure, no long interval elapsed before the attempt was renewed; for it having, by successful experiment, become evident that weaving of worsted in a superior manner could be effected by steam power, it was impossible that any mob efforts could long retard its application. Amongst those who first applied the power loom to weaving worsted may be mentioned Messrs. Horsfall of Bradford. One of their firm, the late John G. Horsfall, Esq., having a bent of mind towards mechanical pursuits, devoted much time, with the aid of an ingenious mechanist, to surmount the difficulties which obstructed the successful manufacture of worsted by these looms,† and in consequence several of them

\* James's History of Bradford, page 168.

† Messrs. Horsfall commenced weaving by power looms in the year 1824 and made the looms.

were set up in the mill of Messrs. Horsfall, in North Wing, Bradford. Riots of an alarming character had, in the early part of 1826, broke out in the neighbourhood in attempts to destroy power looms employed in the cotton manufacture, and these spread to Bradford, where an outbreak of a serious nature occurred in the endeavour to destroy Messrs. Horsfall's machinery. A narrative of the affair is given subsequently under the head "Bradford." The rioters were frustrated in their attempt, and some of them killed.

Other manufacturers at Bradford and the neighbourhood, about the same time as Messrs. Horsfall, set up power looms,\* and the hand weavers foiled in their object, in future did not molest the rapid increase of the power loom which marked the immediately succeeding years.

Progressively the taste for finer qualities of goods grew in the worsted trade. More and more of short stapled fine wool was imported into the business. South Down and merino fleeces were each succeeding year in greater request among fine spinners, whose frames were fully employed in producing yarns for the Norwich bombazine, and Huddersfield markets; for the finer class of West-Riding stuffs; and for the shawls termed Thibet shawls, which were chiefly made at Norwich, Edinburgh, and Raistrick. The yarns for these shawls were made from English merino wool, distinguished then for great purity and fine quality, and mostly spun to 60s warp and 90s weft. These yarns were largely spun by John Wood, Esq., of Bradford, a most eminent spinner of that period, who adopted many improvements for spinning fine yarns. The Thibet shawl cloths, for a time, sold at a guinea a yard in some instances, a sufficient indication of their fineness. Indeed the raw material cost four shillings a pound combing, and the price ranged at sixty shillings a gross for the weft, and the warp thirty-five shillings per pound.† Such extraordinary inducements were certain to produce the highest excellence

\* Messrs. Stansfeld and Briggs, of Burley Mill, near Leeds, and Messrs. Marshall, of Bradford, were among the first who used power-looms in the worsted trade.

† Extracted from a Diary kept since the year 1825, by a gentleman connected with the Bradford trade.

in spinning, and it may be added, that the spinner could not produce the yarn in sufficient quantities to meet the demand. The merino wool, for this purpose, was bought by Mr. Wood, in Hampshire, Essex, and the adjoining counties.

As the use of merino wool had now become extensive in the worsted trade and exercised an important influence on it, it will not be inapposite to trace the progress of merino sheep breeding in this country. George III., ever desirous of the welfare of his people, though oftentimes mistaken in the means for accomplishing his wishes, amongst other improvements projected by him in agriculture and husbandry, imported in 1786 a few merino sheep from Spain, for the purpose of improving the wool of England. Unquestionably this variety of sheep sprung from the English flock which Edward III., as mentioned in a former page, permitted to be exported to Spain, where by assiduous care and crossing, the fleece had become the finest in its staple of any in the world. His Majesty made, from time to time, considerable accessions to his original flock, which throve well and increased very fast, so that in a few years, by distribution and sale, they had come into the hands of some of the most eminent sheep breeding gentlemen in the kingdom. Among these, the late Lord Western stood the most distinguished for his breeding and culture of merino sheep. His flock had its origin in a gift from His Majesty of forty ewes, selected from five hundred merinoes sent by the Cortes of Spain to the King for distribution among his subjects. His lordship's chief care in his improvement of the fleece, was to adapt it for the finest articles of worsted, and he certainly succeeded well in his object. Many other sheep breeders in the kingdom also devoted much attention, with great success, to the breeding of merino sheep, so that at this period (1826) large quantities of such wool were produced in the country.

Contemporaneous with these efforts made in England, the propagation of the merino sheep, which had been obtained from Spain, was carried on to a great extent in Saxony, where the ruling monarch, like our own, took much interest in the enterprise. The government of Saxony was amply rewarded



for the pains which had been taken to spread the breeds so as to become a portion of the public wealth. Hence from this source arose the large supply which enabled Saxony to send to this country large quantities of wool, chiefly for the making of fine woollen cloth, as it, on the whole, ranged in staple shorter than English or Spanish merino. Nor were the French idle in availing themselves of the excellent properties of the Spanish sheep, by transplanting them to their soil, and manufacturing from the wool fine stuffs to which they gave the name of merinoes. Thus it seems, that from the original stock of English sheep, which in times anterior to the invasion of this kingdom by the Normans, pastured on its downs and plains, sprung all these varieties.

From the merino wool produced in France and Germany, were manufactured fine descriptions of stuffs named after the sheep. A Bradford spinner, in 1826, being desirous of extending his export trade in Germany, instituted inquiries respecting the stuffs made there, and received in answer the following information. No worsted yarn of any amount was made on the Continent, except by hand. As the laws prohibiting the exportation of English machinery still remained in force, the continental nations could not obtain our improved frames, and either their handicraftsmen were unable to construct them with sufficient skill, or their capitalists were disinclined to embark in the enterprise. Much yarn was spun by hand in the neighbourhood of Hamburgh. Then as to the weaving of stuffs: a few merinoes were made at Leipsic, and some of them from English yarn spun to No. 46. At Waldenberg, Eisenach and Langensalza, Berlin, Altona, and Erfurt, merinoes were made. For some of these, English yarn was used, but the German manufacturers preferred, most likely for its durability, their own yarn. Whilst the French and Germans were weaving merino pieces, a fabric bearing the same name, but widely different in its structure, arose in the English market, and imparted a most beneficial impulse to the stuff trade of the West-Riding.

A brief narration of the origin of English merinoes will, at this point, find an appropriate place. The wearing of

worsted stuffs, after many changes of fashion, had again become very common amongst people of every degree in England. But it was perceived, as the taste for fabrics of fine texture increased, that plainbacks and other worsted articles of that kind, were not sufficiently delicate in structure for the higher classes. This idea having been mentioned by one of the partners in the house of Messrs. Todd, Morrison and Co., warehousemen, London, to Messrs. Mann, of Bradford, merchants, the latter began to reflect on the best method of supplying the void. It occurred to them that a plainback made with the finest yarn, and spun from merino or other fine wool, would answer the object. Accordingly they employed Messrs. Garnett, of Bradford, to spin the yarn and manufacture such a stuff; who accomplished the task to the full satisfaction of their employers. Some beautiful pieces were the result, three-quarters wide, made from 40s to 52s weft, and 32s to 38s warp, and woven like the plainback, which in every respect they resembled, except in being finer. From the period of their introduction, these stuffs pleased the public taste, and were rapidly sold at high prices. They were originally sold at from seventy-five shillings to eighty shillings the piece; but when the article became known, many manufacturers entered into competition, and making lower sorts, reduced the prices from forty shillings to fifty shillings the piece, according to qualities.

About a year after the full introduction of the three-quarters merino into the market, it was found that, owing to the narrowness of the piece, it did not cut up conveniently or economically for dresses; and the six-quarter variety of merino was brought into the market, where it for many years had a large demand—bringing in some instances as much as one hundred and twenty shillings a piece.

Throughout the year 1827, the worsted spinners were fully employed. Large quantities were sent to Scotland\* for the tartan trade, and an important export of worsted yarn had,

\* Yarns spun at Bradford were in much demand for the weaving of tartan plaids at Bannockburn and Stirling, namely, 18s weft, and 30s double for warp.

as a consequence of the repeal of the law of allowing the exportation of wool and yarn, sprung up.\* This is apparent from the following return of woollen and worsted yarn exported, taken from Mc Culloch's Commercial Dictionary :—

YEAR.	QUANTITY. lbs.	VALUE. £
1820	3,924	810
1821	9,121	1,917
1822	12,515	2,392
1823	6,423	1,127
1824	12,640	2,188
1825	76,961	14,467
1826	131,032	22,794
1827	255,708	37,932

Altogether, during the year 1827, a good and steady business characterised the yarn and stuff department.

As before adverted to, two causes concurred in rendering South Down wool applicable to the purposes of the worsted spinners: first, the adaptation of the preparing and spinning frames to the spinning of wool of shorter staple than formerly; and secondly, the change which had of late years been continually taking place in South Down wool, whereby it had become longer in staple. The latter cause arose, in a great measure, from an improved course of husbandry, which by producing abundance of esculent gross food, such as turnips, had vastly augmented the weight of the fleece at the expense of its fineness of fibre. Being, however, in that respect much superior to the long wools of Lincolnshire and Kent, its adoption in the fabrication of stuffs had led to important results, inasmuch as articles could be furnished of a delicate even structure, and clothly touch. But the same quality which rendered it so desirable for the stuff trade detracted from its value in the manufacture of woollens, and it had also become too coarse for making fine cloths, so that the

\* The spinning of yarn in Bradford for export in any quantities may be said to have taken its rise in 1826.



supply for that purpose was drawn, year by year, from Germany. Hence, as the worsted industry could only use a portion of this short wool, the residue sold at low prices. As in the two last years, the wool of South Down sheep had sold at extremely low rates, the farmers made, in 1828, a desperate effort to obtain a renewal of the sixpenny duty on the importation of foreign wool, and a motion for a Committee of inquiry into the alleged grievances of the wool growers was made in the House of Lords by the Duke of Richmond.

After some ineffectual attempts by Government to oppose the inquiry, it was at last conceded, notwithstanding the efforts of Lord Wharncliffe, supported by the Earl of Harewood. The Committee appointed by the House of Lords sat to receive evidence on the subject, and examined a multitude of witnesses both on the part of the agriculturists and the woollen manufacturers, for on this occasion, the worsted ones not being directly affected by the question, did not take any prominent part in the proceedings. There are, however, portions of the evidence which throw great light on many particulars connected with the worsted trade, and are therefore transferred to these pages.

*As to the stock of wool on hand :—*The general evidence on this point concurred that there was three years' growth of wool on hand. One witness stated that the manufacturers had less wool in stock than they were wont to hold ten years previously, because they had been taught by the distress of the year 1826 to refrain from purchasing so largely, and had left it in the warehouse of the woolstapler in some measure, and the woolstaplers in the hands of the farmer. The prevailing opinion unhesitatingly declared that the quantity of wool grown in England had rapidly increased.

*As to the change in the quality of wool :—*The sum of the evidence on this head clearly denoted that there had been a great depreciation in the quality of wool both for the cloth and stuff trade. Mr. Richard Healey, of Lincolnshire, stated that the average weight of the fleece in Lincolnshire was six pounds and a half. He had no means of knowing whether the quantity produced had increased or not; but his own opinion was that the wool in Lincolnshire and Leicestershire had decreased in quality and quantity. A few years before, in that portion of Lincolnshire called the Marshes, nearly the whole of the persons occupying those lands were graziers. They purchased in April one-year old sheep, and sheared those sheep, first hogs, second shearlings, third two shears; consequently they took three fleeces of wool from those sheep. The wool was very heavy and was a great source of profit. Though the practice had continued to a great degree, the more general

practice was to buy hogs and clip them twice instead of three times, consequently the sheep came to market much earlier than they did. In other parts of Lincolnshire and in the Midland Counties, among graziers, it was the practice to purchase hogs or to breed them, and to clip those hogs of that age at two years, and then send them to market. This usage had been very materially discontinued, for there were very few persons who did not dispose of their two-shear sheep at a much earlier age. Mr. Healey then adverted to another cause, which tended to decrease both the quantity and quality of wool, which cause, he stated, was then increasing, though it had arisen within the last three or four years, namely, using more ewes and breeding more lambs, and sending the latter to the London market, instead of keeping them to be either hogs or shearlings, consequently the quantity of hog wool which is the most valuable, and the wether wool which is the next best, was very much diminished.

Another witness, Mr. Tower, of Essex, observed, that the quantity of wool used to comb for the coarser sorts of yarn for the bombazine manufacture at Norwich, and the finer sorts, was so considerable, that the system of topping the lambs' wool had been abandoned by many persons, and everything that could be turned to the purpose of worsted yarn, that is, every kind of wool that will measure about three inches had sale for that purpose. The change begun to take place from the year 1820. In order to obtain this wool the lamb is not shorn until two years old.

C. C. Western, Esq., of Essex, said, in some parts of the country, the South-Down flocks have been crossed by long-woolled sheep. In Norfolk particularly, and in some other counties, it had been the habit to cross South-Downs with the new Leicester and other long-woolled sheep. The reason is that the wool so crossed, though inferior in point of fineness, had a longer staple and fetched a higher price than even the finest of the South-Down fleeces. It became a totally different description of wool.

Mr. John Varley, of Stanningley, gave evidence to the following effect:—In short wools the quality of British wools is much deteriorated or got coarser: in long wools it had been much improved, owing to crossing them with different kinds of rams. By so doing the farmers were getting more mutton. They were fattening much sooner and growing a longer staple of wool, which was more adapted to the demand at the time.

*The application of short wool to the purpose of combing*:—Mr. Wm. Nottidge, Woolstapler, Bermondsey, stated, that there was a considerable quantity picked out from South-Down fleeces that would comb which formerly never used to be the case. From the change which had taken place in the breed of sheep there was more combing wool, and from improvements in machinery they were enabled to comb wools of a shorter description. Mr. Robert Jowett, Woolstapler, Leeds, said:—When the lamb had not been shorn, the fleece taken off the succeeding summer was called hogget or teg wool. A considerable portion was then used for combing purposes which used not to be, but in consequence of improvements in machinery the spinners were enabled to use wool of a much shorter staple than they used to do.

Mr. J. Hubbard, Woolstapler, Leeds, stated, that South-Down wool had never, until of late years, been applied to combing purposes; but within the last ten years there had been such a great improvement in machinery adapted to the shorter staple, that they could comb wool which they never thought of combing



ten years ago, and that was the reason Mr. Luccock, in his tables, gave so large a proportion of the kingdom to clothing wool. A great deal of the wool which he took at that period, would now (1828) be used for combing wool.

*On the exportation of British wool:*—Several witnesses on the part of the wool-growers stated, that the permission to export wool had been of no benefit to the flock masters. The quantity exported was insignificant, and the French Government levied a duty on it of thirty-three per cent.

Mr. Henry Legg, Woolstapler, Bermondsey, was clearly of opinion that the liberty to export our wool was injurious to the national interests. "If," said he, "you have a pack of long wool of the best class that is grown in Kent, which we term super matching or long drawing, manufactured into goods, here it is chiefly for bombazines, and then sold in the foreign market. The difference of price it produces when manufactured must be an advantage to the country, but if you let it go and it is manufactured in France, where they are very anxious to make bombazines, as I know, having been there to see it, and they cannot obtain the wool elsewhere, which I know to be the case, then that will enable them to make an article to compete with us."

Some other points were brought out in evidence, namely, that the home market was the chief support of our wool manufactures, more than three-fourths being for home consumption; that there was a large amount of cotton mixed with wool in these manufactures which much influenced the price of the material. Every person concerned in the purchase of wool must have perceived, from time to time, the intimate relation which the price of wool and cotton bears to each other.

The subjoined table has been drawn up from statements prepared by several wool dealers, and tendered as evidence before the Lords' Committee, and will, with the preceding table at page 382, present a view of the prices of long wool in England since the commencement of the nineteenth century.—

YEAR.	LINCOLN PER lb.	KENT PER lb.	YEAR.	LINCOLN PER lb.	KENT PER lb.
1817	1 8 $\frac{1}{2}$	1 3	1823	1 0 $\frac{1}{2}$	1 0
1818	1 11 $\frac{1}{2}$	2 0	1824	1 2 $\frac{1}{2}$	1 1
1819	1 7	1 3	1825	1 6	1 4
1820	1 6	1 4	1826	0 11	0 11
1821	1 0	1 1	1827	0 11	0 10 $\frac{1}{2}$
1822	1 0	0 11	1828	0 10	



When the Committee reported to the House of Lords the evidence adduced, it was so overwhelming in favour of the manufacturing interest, that it virtually settled for ever the question of protection to the English wool growers. The Report is of the most voluminous character, and it has been endeavoured to extract from it all that can be interesting respecting the worsted trade. There are two or three particulars, however, in the Report, which are worthy of remark. For instance, it is stated that common worsted stuffs made from long combing wool cost fifteen to sixteen shillings a piece of 28 yards. Merino gown and shawl pieces, (28 yards) cost about thirty-four shillings. The former weighed about two ounces and a quarter per yard, and consumed about four times that weight of fleece wool.

For presentation to the Committee of the House of Lords, Mr. James Hubbard, of Leeds, woolstapler, drew up in conjunction with Mr. George Goodman, an account of the number of sheep and produce of wool in England, from which the following table has been prepared. Mr. Hubbard's statement has, along with that of Luccock's, (given in a preceding page,) been established as a high authority on the subject.\*

On comparison of this table with that at page 321, it will be found that the quantity of long wool grown in England had, in twenty-eight years, become doubled. It is important to observe the great number of counties which in 1800 produced short wool fit only for the woollen business, now supplied the worsted department. This arose first from the wool having, from the causes before mentioned, become in the interval much longer in the staple, and secondly from the better adaptation of worsted frames for spinning shorter wool. Another fact may be noticed, namely, that in the meantime the weight of English fleeces had very considerably increased in weight.

\* Mr. Hubbard founded his estimate upon the assumption, that there were in England the same number of sheep as when Mr. Luccock made his calculation, (see page 320.) Then the number of long woolled sheep was set down at 4,153,308, now the number had been more than doubled.

TABLE OF LONG WOOL PRODUCED IN ENGLAND IN 1828.

	NUMBER OF LONG WOOL SHEEP.	NUMBER OF PACKS.	WEIGHT OF FLEECE lbs.
<i>Northumberland</i> ..	269,060	6,166	5½
<i>Durham</i> .. .. .	159,385	3,818	5¾
<i>Ditto</i> .. .. .	67,200	2,380	8½
<i>Yorkshire</i> —			
<i>West-Riding</i> ..	191,517	4,389	5½
<i>East-Riding</i> ..	306,240	7,656	6
<i>North-Riding</i> ..	91,296	1,902	5
<i>Holderness</i> ..	84,000	2,800	8
<i>Other Parts</i> .. .	14,310	477	8
<i>Derbyshire</i> .. .	362,400	9,060	6
<i>Nottinghamshire</i> .. .	255,147	6,910	6½
<i>Lincolnshire</i> —	123,648	3,091	6
<i>Rich Land and</i> )	1,329,125	49,842	9
<i>Marshes</i> .. }			
<i>Miscellaneous</i> ..	505,657	12,641	6
<i>Rutlandshire</i> .. .	114,000	2,850	6
<i>Northamptonshire</i> ..	640,000	16,000	6
<i>Warwickshire</i> .. .	342,962	8,574	6
<i>Leicestershire</i> .. .	400,528	10,013	6
<i>Oxfordshire</i> .. .	304,584	6,345	5
<i>Buckinghamshire</i> ..	222,968	4,645	5
<i>Gloucestershire</i> ..	355,000	8,875	6
<i>Ditto</i> .. .. .	200,000	6,666	8
<i>Somersetshire</i> . . .	250,368	5,216	5
<i>Worcestershire</i> .. .	330,504	6,541	4¾
<i>Monmouthshire</i> ..	177,619	2,960	4
<i>Herefordshire</i> .. .	333,300	5,555	4
<i>Shropshire</i> .. .	281,400	4,690	4
<i>Staffordshire</i> .. .	186,840	3,503	4½
<i>Bedfordshire</i> .. .	204,000	4,250	5
<i>Huntingdonshire</i> ..	195,500	4,480	5½
<i>Cambridgeshire</i> ..	41,688	1,390	8
<i>Norfolk</i> .. .. .	455,786	8,546	4½
<i>Ditto</i> .. .. .	38,500	1,203	7½
<i>Hertfordshire</i> .. .	138,500	2,885	5
<i>Kent</i> — .. .. .	524,475	10,380	4¾
<i>Romney Marsh</i> ..	185,000	5,010	6½
<i>The Marsh</i> ..	108,330	2,934	6½
<i>Devonshire</i> .. .. .	327,649	6,826	5
<i>Ditto</i> .. .. .	193,750	6,458	8
<i>Cornwall</i> .. .. .	203,000	5,920	7
	10,515,236	263,847	

In consequence of the extensive demand for combing wools arising from the increase of the stuff manufacture, and a finer class of yarn being required, the Australian wools, which could now, owing to improvements in the machinery be spun, began to be worked up in the West-Riding in large quantities. For many years it had been extensively used in the making of woollen cloth. It is stated that the first wool imported from Australia consisted of a small parcel brought over by the Rev. Samuel Marsden, who presented a sample of it to Messrs. Thompson, of Rawden, cloth manufacturers.\* Afterwards, Australian wool was mostly consumed by the West of England clothiers. It was not until 1828 that it came into use to any extent in the worsted manufacture. Some time previous, a

\* The following is a copy of a letter from Mr. William Thompson to William Horsfall, Esq., of Calverley House, narrating the circumstances attendant upon the first use of Australian wool in England:—Rawden, 1st Month, 8th, 1856. It was in the spring of 1808 when the Rev. Samuel Marsden returned to this country, and then brought the first wool with him that ever came from the colony. He came over from Horsforth to dine with my father as an old acquaintance, and after dinner we went down to Park Mill, then employed by my brother Jeremiah and myself, under the firm of J. & W. Thompson. On going over the premises he saw some Cheviot fleeces, and inquired their value, at same time stating he had brought over a small quantity of wool from the colony, but did not know its value, as they had used it for the cattle to lie upon, &c. He offered the wool to me, on condition that I would pay the carriage down from London, make a piece of black cloth from the finest, (no admixture,) and let him have a suit, which I agreed to. The wool was sent down, about ten or twelve stones, which was sorted, and about five stones of the finest sort made into a white cloth, then dyed black and finished, one-half of which, say about twenty yards, was sent to him in London. The wool proved well, and made a cloth superior to his or my expectation; he had a suit made from it, and was so much pleased therewith, as to visit King George III. in it, who admired it very much, and expressed a wish to have a coat of the same cloth, which was at once readily granted. His Majesty was so impressed with the importance of the wool of the colony, that he gave orders for S. M. to have selected some of the best sheep from his flock of Merinoes at Windsor. They had a good deal of conversation about the colony, and His Majesty expressed a fear they would not be able to make returns, when S. M. informed him that he thought wool would ultimately be a large return. A while after, Alexander Birnie & Co., Wine and Porter Merchants, London, imported a large quantity of wool in casks, which I purchased from them, and a large proportion of it had evidently been buried in the earth. After this we received largely on consignment from S. M., Edward Cox, (late a Captain,) and others. Is it not wonderful to contemplate the increase of production in about forty-five years!



Bradford spinner (Mr. Wood) had brought it into notice, but the quantities used had been unimportant. In July, 1824, he purchased at a London wool sale a few bags of Australian wool. At first, it was mixed in combing with English wool, but it was so short and required so much skill in the hand comber to prepare it, as to oppose serious obstacles to its use for some years. But in October, 1828, Mr. Wood purchased a considerable quantity of it at another London wool sale, and the difficulties of combing and preparing it having in a great degree been surmounted, he henceforward used it more and more as a substitute for merino and Saxony wool in the production of fine yarn; whilst other spinners in Bradford and the vicinity followed his example. The following statement extracted from Mr. Southey's valuable work on colonial wool,\* exhibits the vast increase of our importations of Australian wool during the last twelve years. In 1816, there were imported of it into the United Kingdom, only thirteen thousand six hundred and eleven pounds; in 1818, eighty-six thousand five hundred and twenty-five pounds; in 1819, seventy-four thousand two hundred and eighty-four pounds; in 1820, ninety-nine thousand four hundred and fifteen pounds; in 1821, nearly double, namely, one hundred and seventy-five thousand four hundred and thirty-three pounds; and in 1828, one million, five hundred and seventy-four thousand, one hundred and eighty-six pounds. Henceforth from the fineness of its fibre and its excellent adaptation for making fine stuffs, it became a most powerful auxiliary in the advancement of the worsted manufacture. Of all our Colonies, there is none which forms such a valuable adjunct to the mother country as this of Australia.† Fitted by climate,

\* "The Rise, Progress, and Present State of Colonial Wools," by Thomas Southey, page 53. (London, 1848.)

† New South Wales was made a Settlement in 1788. The first sheep landed there consisted of thirty sheep of the Indian breed, which were purchased by the first settlers of the captain of a merchant vessel from Calcutta, in 1793. These were afterwards increased by importations of sheep sent from the Cape of Good Hope, whither the original flocks had been carried by the Dutch, and also by flocks from England. Both the Cape of Good Hope and the English sheep were of the merino breed. These rapidly increased in the favourable climate of New South Wales, so

soil, and circumstances as peculiarly one for the growth of wool of a most delicate fibre admirably adapted for the woollen and worsted manufactures of England, the value of its connexion is incalculable. By means of it, we have become more and more independent of the continental supply, and in return for their wool, the colonists receive our textile goods.

In the preceding portions of this work, allusion has been made to the camblet trade of Leeds. These camblets were fabricated from English wool, and comprehended three varieties: the tartan or plaid camblets which were combined of many colours, each colour thrown in by a separate shuttle; the plain camblets, that is all of one colour; and a third variety made from worsted similar to the tartan camblets except these latter were twilled, whilst the tartan camblets were plain. All these articles had been from the commencement of the century extensively produced in Leeds and the neighbourhood, but principally in that part of the town called the Bank. The manufacturers numbered about a score and employed several hundred hands. These pieces were supplied in great abundance for the home trade, and also for shipping to the Continent of Europe, and to North and South America.\*

Thus the camblet manufacture formed an important branch of industry at Leeds, which fluctuated exceedingly between high prosperity and great depression. A large and influential number of stuff merchants resided at Leeds at this date (1829) who attended Bradford and Halifax markets, and purchased

that in 1796, there were then one thousand five hundred and thirty-one sheep; in 1798, three thousand nine hundred and two; in 1800, six thousand one hundred and twenty-four; in 1803, ten thousand one hundred and fifty-seven; in 1810, twenty-five thousand eight hundred and eighty-eight; and in 1821, two hundred and ninety thousand one hundred and fifty-eight; this is thirty-three years after the Settlement. To no one is this Colony more indebted than to Captain Macarthur, who was among the earliest settlers, and devoted all his capital, skill, and energy, to the improvement of Australian wool; at this period, the only Australian wool of any moment, was that grown in New South Wales. Van Diemen's Land only began to come into notice as a Colony in 1817, and it was several years before its wool products were of much avail. In after years, South Australia and Western Australia furnished large quantities.

\* Communicated by Robert Baker, Esq., Factory Inspector.



largely of the textile products of both places. These gentlemen, along with others interested in the worsted trade of Leeds and its neighbourhood, attempted to establish a general stuff market at Leeds, and the attempt so far succeeded that many worsted manufacturers exhibited for two or three weeks their goods in the South Market; but happily for Bradford the project irremediably failed, never again to be resuscitated. While on the subject of Leeds worsted trade, it may be here recorded that in July, 1829, a strike of stuff weavers occurred at that place, in respect of the masters reducing the wages to the extent of twenty or twenty-five per cent. About one thousand hands were from this cause thrown out of employment, but only continued so for a short time as the masters met and honourably determined to give the former rate of wages, whereupon the weavers returned to their work. But it is evident that the Leeds worsted manufacture was gradually waning, for on turning to the Leeds Mercury, May, 1830, this ominous passage is found. "The worsted trade of Leeds, which last winter was so depressed as to *become almost extinct*, is now reviving."

Returning to the view of the general stuff manufacture in the North of England, it is seen that during the whole of the spring and summer of 1829, the Bradford and Halifax markets remained very flat and profitless, and symptoms of discontent became so alarming that troops were stationed at both towns, but no outbreak happened. In September, the demand began to improve, and in one of the local chronicles it is reported that "more goods sold in Bradford market than for the last six months, but at reduced prices." Further on in the autumn, the sale of merinoes, which had as usual continued brisk throughout the year, were so eagerly bought, that the manufacturers advanced the wages of the weavers of merinoes, (which were woven by hand) sixpence a piece. Stuffs of inferior qualities of all kinds were at the same time unsaleable.

In all its branches, the stuff trade both in the North and South of England, during the year 1830, exhibited a healthy and prosperous state. Even the much depressed camblet



business at Leeds began to revive early in the spring. The Bradford market was "brisk as usual," and Halifax trade improving. Stuffs were sold freely during the months of March, April, May, and June. By July, however, the worsted trade had become exceedingly flourishing, and it is related of Bradford market that all the goods in the Piece Hall had been sold, so that the merchants could not rely upon being furnished with more than a weekly supply, which seemed inadequate to their wants. This prosperity continued up to the month of September, when it is reported that the "worsted trade at Bradford, Halifax, and Leeds was never better, and that prices had advanced some ten and others twenty per cent." Again, "in Bradford district, wages of woolcombers and weavers had been advanced, that Bradford manufacturers were bankrupt in stock, and the demand greater than the supply." Early in October, owing to the unsettled state of the Continent, arising from the French Revolution, which convulsed the whole of Europe, the markets for pieces began to grow slacker, so that in the beginning of November, partly from the commencement of the winter season, and partly owing to the continental disturbances, little amount of business could be transacted in stuffs. The manufacturers did not suffer much from the partial cessation of our continental trade, because it was in a great measure compensated by the increase, at this autumnal period, of our American shipments, so that at the end of the year the markets at Bradford and Halifax were unusually brisk with an advance of one shilling to one shilling and sixpence a piece.

Though a large advance had been made in the amount of the manufacture during the last five years, it by no means equalled that in the preceding quinquennial period. The increase, however, was a satisfactory one, and placed upon a surer basis than the former. It may safely be assumed that the manufacture in the West-Riding had reached in value to eight millions. Of this amount, the town of Bradford contributed about two millions sterling, being equal to the whole worth of the Yorkshire worsted manufacture twenty years

previous. Halifax and Keighley may be set down as representing £750,000 each. The amount of drawback allowed to the manufacturers of the several towns in the Riding engaged in the stuff worsted industry stood thus:—Bradford,\* £5,258; Halifax, £1,905; Keighley, £1,866; Baildon, £815; Wakefield, £724; Bingley, £621; Haworth, £288; Leeds, £277; Otley, £242. The districts thus:—

			£	s.	d.
Bingley District	..	..	1239	13	8
Burnley and Colne District		..	776	3	11
Bradford	do.	..	6948	6	7
Halifax	do.	..	4148	5	8
Huddersfield	do.	..	1162	13	8
Dewsbury	do.	..	420	3	9
Leeds	do.	..	474	5	0
Otley	do.	..	1149	5	5
Keighley	do.	..	2391	7	8
Skipton	do.	..	483	3	9
Wakefield	do.	..	955	18	0
			<hr/>		
			£20,149	7	1
			<hr/>		

With this increase in the manufacture in the North, the export of stuffs kept pace, as the subsequent table exemplifies.† It is especially to be remarked that the amount of these goods shipped to America had, in five years, been nearly quadrupled, and in one year more than doubled. In the two latter years, there had been an extraordinary decrease in our shipments to Germany owing to the revolutionary ferment on the Continent, and those also to the East-Indies and China had declined. But Italy had become an excellent customer for our stuffs.

\* On comparing the amount of drawback for the town of Bradford in this year 1830, with that in the year 1825, the reader will be surprised at the development of the worsted business there. This arose, in a great measure, from the large amount of yarn spun at Bradford, not only for the town and neighbourhood, but also for Scotland, Norwich, and for export.

† Porter's Tables, part 1, page 71, *et seq* :

EXPORT OF WOOLLEN AND WORSTED STUFFS.

	1826	1827	1828	1829	1830	1831
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.
Russia .. ..	32,003	34,144	29,426	31,990	26,962	22,741
Sweden .. ..	1,503	3,843	322	2,311	867	1,903
Norway .. ..	831	416	1,238	2,309	3,665	3,836
Denmark .. ..	647	738	1,201	1,434	1,053	957
Prussia .. ..	429	574	123	125	40	77
Germany .. ..	395,581	454,414	427,349	515,571	363,823	306,994
Netherlands ..	74,662	84,654	101,441	102,695	84,550	71,571
France .. ..	1,877	1,850	4,822	4,598	3,672	4,637
Portugal, A- zores, & Ma- deira .. ..	28,476	25,849	17,715	24,877	23,958	21,193
Spain & the Canaries .. ..	14,565	26,343	30,947	50,821	42,162	43,035
Gibraltar .. ..	17,257	17,745	19,719	6,502	1,956	3,743
Italy .. ..	55,178	85,955	90,310	79,733	98,349	81,752
Malta .. ..	1,488	957	1,765	683	1,132	845
Ionian Islands	270	235	520	129	542	154
Turkey & the Levant .. ..	851	1,265	1,300	2,141	4,132	3,760
Guernsey, Jersey, Al- derney, and Man .. ..	2,555	1,938	3,970	3,429	6,033	4,019
East Indies & China .. ..	242,432	136,905	192,542	161,717	188,519	165,680
New Holland	1,084	1,579	1,522	1,077	1,649	2,729
Cape of Good Hope .. ..	2,761	2,766	2,014	5,544	8,751	5,824
Other parts of Africa .. ..	794	2,821	2,331	3,196	2,354	4,776
British North American Colonies .. ..	23,533	26,792	30,767	30,118	40,856	49,510
British W. Indies .. ..	12,232	20,333	13,100	16,098	15,349	12,374
Foreign W. Indies .. ..	4,273	9,052	10,336	6,966	4,843	5,927
U. S. of Ame- rica .. ..	179,889	262,569	227,297	208,855	275,568	631,183
Brazil .. ..	15,387	41,305	75,212	24,295	29,423	11,477
Mexico & the States of S. America .. ..	14,750	13,625	23,564	20,344	22,298	26,707
Totals ..	1,125,308	1,258,667	1,310,853	1,307,558	1,252,512	1,487,404



Whilst the consumption of worsted was thus expanding both at home and abroad, the power-loom, more and more came into request, and trenched upon hand labour, so that by the year 1830, the condition of the hand-loom weaver had gradually become worse. The subjoined is a continuation of the scale of wages in a mill at Bradford, given in a preceding page (413) and will prove that in four years there had been a considerable fall in the earnings of weavers during the last four years.

	1827		1828		1829		1830	
	s.	d.	s.	d.	s.	d.	s.	d.
Weavers from 12 } to 16 years old }	8	1	7	11	7	11	7	6
Weavers from 16 } and upwards }	11	1	10	6	10	2	10	3
Reelers of worsted yarn, women . . . . . }	9	4	9	8	8	7	9	4
Warpers of worsted yarn, women . . . . . }	12	0	12	0	12	0	12	0
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Hands working by the day in factories from 9 to 11 years old, chiefly girls }	2	0	3	6	2	0	3	6
Hands from 11 to 14, chiefly girls . . . . . }	3	6	5	9	3	6	5	9
Hands from 14 and upwards, women . . . . }	8	0	7	0	8	0	7	0
Overlookers . . . .	18	0	26	0	18	0	26	0
Woolsorters . . . .	18	0	24	0	18	0	24	0

\*

But the fall in the wages for weaving had borne with the greatest severity on the hand-loom weaver, whose reward

\* Porter's Tables, part 3, page 419.

for weaving 44-inch plainbacks only amounted to two shillings and ninepence, just one-half what it was a few years previous.

The following interesting remarks on this subject are extracted from a letter of Richard Fawcett, Esq., of Bradford, to Mr. Bischoff, written in March, 1830.

At the present time, I have no doubt, from the best information, that we have arrived at that point when the hand-loom can meet the power-loom manufacturer, but in case of any improvement in trade, should even sixpence per piece advance be given, it would immediately be a bonus to the power-looms, and increase them so as to bring down wages again to their present level.

The lowering of wages in the goods to which I have before alluded, (forty-four inch plainbacks) does not arise from their having gone out of demand; on the contrary, plainbacks (bombazets) as they are called, are made in greater quantities than any other description of goods, and I think I should not be saying too much, were I to say, that double the quantity of these goods are now made to what they were eleven years ago. I have had conversation yesterday with Mr. Aldam and Mr. Thompson, both of whom you know, and they are decidedly of opinion that power-looms have been the cause of this depression of wages, and it is one which we cannot but lament, as the weavers are of all classes we have to do with, the most orderly and steady, never at any period, that I know of, constraining an advance of wages, but submitting to every privation and suffering with almost unexampled patience and forbearance.

I have thought it right to make these observations to you, to give you some idea of their present situation and future prospects, which are, I must confess, anything but bright.

During the year 1830, the manufacture of lastings was especially brisk, being in demand chiefly for the American market. Our export of yarn to the Continent also gradually improved, and this, together with the general prosperity of the textile arts, had unduly increased the price of wool. This was especially the case with South-Down wool, which had become an important material in worsted fabrics. In 1828 it is quoted at eightpence a pound; in the following years it fell to sevenpence; but now its value had reached one shilling and twopence a pound. And the like rise had been experienced in the rates of New South Wales wool, which, in the year 1828, only reached tenpence a pound, but had since gradually risen to two shillings and fourpence a pound. Until the year 1830 London possessed exclusively the sales of Australian wool, but in this year some sales were

effected in Liverpool. The rapid rise in the value of South Down and Australian wool may be attributed, in the main, to its being now, from the improvements in machinery, adapted to the worsted manufacture. Likewise every description of English wool fitted for worsted, stood at a high rate; and altogether the trade was in a flourishing condition.

An alteration for the worse evinced itself in the early months of the year 1831. The agitation on the Continent had scarcely subsided, when that relative to the Reform Bill now disturbed and paralyzed our national industries. Its influence especially affected the worsted department. Throughout the spring months the markets had been flat, and prices quite unremunerating, though there had been a considerable reduction in the rate of wool. Most of the purchases of stuffs during the summer months consisted of goods of low qualities, and the stocks of the finer sorts accumulated. In August, the transactions in Bradford and Halifax markets were very limited, arising somewhat from the expectation that wool would recede in value. Little business continued to be transacted in Bradford market during the autumn, and although wool rapidly sank in value, yet the rates of pieces were anything but remunerating. The depression in the worsted markets would have assumed an alarming appearance, had not the export of stuffs to America increased this year to more than double the amount of last year, and counterbalanced the loss from the interruption of the markets on the Continent.

No improvement in our stuff market could be observed during the months of January and February, 1832, but as spring approached, a larger demand sprung up, especially for goods of low descriptions. It was, however, noted that in April the sale of pieces had become more rapid than for several weeks past. Throughout the summer, the demand fluctuated much; sometimes there occurred tolerable markets, but, on the whole, they were flat.

Notwithstanding this depression in the stuff department, the year 1832 witnessed another woolcombers' strike. It might readily be supposed that after the disastrous results of the



contest in the year 1825, the woolcombers would be exceedingly reluctant to provoke another of the same description. But such proved not to be the case. The strike first commenced at Dolphin Holme Mill, then worked by Messrs. Hindes and Derham, but it afterwards spread to the establishments of that firm at Leeds and Bradford, whereby above one thousand persons were thrown out of employment. As an illustration of the reckless nature of the strike, and the want of just cause of complaint, it may be instanced that the earnings of forty woolcombers at Dolphin Holme Mill in the year previous to the turn-out, averaged sixteen shillings a week, and the average earnings of sixty-three families, consisting of about four persons to a family, reached £88 each. Thus, it is evident that fair wages were obtained by the turn-outs. Following the example in former strikes, they solicited subscriptions from various quarters of the kingdom, and obtained for the relief of the Dolphin Holme hands alone nearly £2,000, of which £1,800 arose from subscriptions in Bradford, and the remainder in Halifax, Leeds, and Kidderminster. Besides this, there were disbursed to the Bradford hands £794, and to the Leeds ones £255. Partly owing to the isolated situation of Dolphin Holme, a sequestered hamlet seven miles from Lancaster, and partly owing to the spirited conduct of the proprietors, the combination was effectually broken up. It is estimated that the Union expended £4,000 in this contest:\* but it was the last strike of the woolcombers of any importance, for it compelled the masters to seek in the combing machines, which had been recently improved by Messrs. Platt and Collier, relief from the intolerable conduct of their workmen.

Turning from the North to the South of England:—the trade of Norwich in its staple articles gradually declined, and, as before intimated, endeavours from time to time were made to compensate for the loss by the introduction of new fabrics such as Norwich crapes. But these did not long continue in fashion, and now when the manufacture was slack,

\* "Character, Object, and Effects of Trades' Unions," (page 61) London, 1834.

and the weavers suffering for want of employment, an effort was made by the principal inhabitants of Norwich to excite a greater desire amongst the females to wear the manufactures of the place; and for this purpose a Ball was given at the Assembly Rooms, and called the 'Norwich Crape Ball,' where every lady appeared in a dress of that stuff. The general colour of these dresses was a bright ponceau, which had a very elegant effect; the relief to the weavers was, notwithstanding, only very temporary. Subsequently to Norwich crape, various fancy silk and worsted articles, some of very light texture, were manufactured, and extensively adopted for ladies' dresses, such as the crape de Lyons; the poplin Française, the silk worsted brilliant, the Irish poplin, &c. The demand, however, for these was not permanent, as they were rarely sought after for more than one or two summers. These latter articles were introduced by Messrs. Edward and Henry Oxley of Norwich, whose ingenuity in inventing, and perseverance in accomplishing, were unbounded. They also invented and brought to perfection, a most beautiful silk and worsted article in imitation of Canton crape. This was done at enormous trouble and expense, but after getting a quantity ready for the market, which took considerable time from the difficulty and tediousness of the process, there sprung up a distaste for the original fabric, and it was deemed prudent to abandon the imitation of it. About the year 1832, the article called 'Challis' was introduced, certainly the neatest, best, and most elegant silk and worsted article ever manufactured: it was made on a similar principle to the Norwich crape only thinner and softer, composed of much finer materials, and instead of a glossy surface as in Norwich crapes, the object was to produce it without gloss, and very pliable and clothly. The best quality of 'Challis' when finished with designs and figures (either produced in the loom or printed) was truly a splendid fabric, which commanded the attention of the higher circles, and became a favourite article of apparel at their fashionable resorts and parties. The worsted yarn for the weft of this article was spun at Bradford, from numbers 52s. to 64s. The making of these 'Challis' fabrics soon afterwards commenced in the North.

This arose from the high rate of wages at Norwich, and the disinclination evinced there to the use of machinery. Regarding the decadence of the Norwich manufactures, Mr. Wm. Stark, in giving evidence before a Commissioner for inquiring into the condition of the hand-loom weavers, related with great clearness, the causes which have from time to time led to the transference of particular branches of the Norwich trade to the West-Riding.\* One of the principal causes lay in the Norwich manufacturers, who, notwithstanding the enterprise displayed by them in the invention of new fabrics, and the taste evinced in their designs and beauty of finish, lacked the inclination to keep pace with the North in the introduction of machinery, whereby they were soon outstripped in the race of competition. Again, there existed a strong party spirit in the city, and neither party durst introduce machinery in dread of offending the bulk of the citizens, who with a short sightedness, which has been extremely injurious to their interest, were violently opposed to the use of spinning and weaving machines, and as before seen, this opposition sometimes occasioned dangerous riots in the city. The alarm cry arose that wages would be lowered by machinery, and the alarmists failed to observe that without this adjunct they could not successfully compete with the mighty efforts of the North. In truth, for any one at this period to attempt to set up machinery in Norwich, was to venture his life.

Up to this period, the East India Company had the exclusive trade to China, but now it was thrown open, but not before the export of our stuffs had, in their hands, greatly decreased, as is hereafter plainly indicated. There is, in Porter's Tables, an account of the various textile fabrics shipped by the Company for Canton since 1814, which gives a large and curious list of both woollen cloths and stuffs, which will be of service as denoting the kinds made here for the China market, namely, broad cloths, long ells, superior long ells, embossed ells, broad ells, worsleys, camblets,

\* Evidence of Mr. Stark, of Norwich, adduced before one of the Commissioners appointed to inquire into the condition of the hand-loom weavers.



mohair camblets (only sent in 1827-8) double colours, Moscow cloths, templars, striped duroys and figured duroys, (only exported in the year 1811) vigonia cloth, merino robe cloth, (only in 1815) seraglio ratteens, shags, vigonia shags, Colchester baize, long wool baize, flannels, broad flannels a yard wide, Salisbury flannels, striped list cloth, medleys, Russian imitation cloth, grey broad cloth, British stuffs, and scarfs.

Of such of these articles as rank among stuffs, the subjoined table exhibits the number sent each year since 1810. Nearly the whole of these were camblets, the other stuffs consumed in China were comparatively insignificant.

AN ACCOUNT OF CAMBLETS, STUFFS, &c., EXPORTED FROM GREAT BRITAIN TO CHINA, FROM 1811 TO 1833, BY THE EAST-INDIA COMPANY, SPECIFYING QUANTITY AND DECLARED VALUE.

	QUANTITY. PIECES.	VALUE.		QUANTITY. PIECES.	VALUE.
		£			£
1811	25,111	175,169	1823	20,000	84,582
1812	20,405	207,383	1824	680*	89,314
1813	17,940	159,869	1825	24,400	102,536
1814	17,975	132,047	1826	20,071	94,615
1815	21,330	156,962	1827	20,075	89,002
1816	22,050	159,581	1828	14,104	82,907
1817	150*	134,034	1829	11,470	55,721
1818	19,000	124,779	1830	12,450	60,681
1819	20,246	157,218	1831†	4,150	20,358
1820	20,000	140,721	1832	4,460	21,714
1821	21,500	144,196	1833	3,037	113,827‡
1822	19,800	91,772			

But whilst the value of stuffs imported by the Company into China still remained considerable, those shipped by them to the East-Indies had dwindled to nearly nothing.

\* These are printed so in Porter's Tables, but are evidently mistakes.

† Allowing for the consignments of this year which were deferred beyond the usual period of shipment, the export would be six thousand one hundred and fifty pieces of the value of £29,625.

‡ Porter's Tables, part 3, pages 362, *et seq* :

As previously mentioned, the trade to the East-Indies, became free in the year 1813, and henceforward the private traders successfully competed with the Company in shipping for those quarters the stuffs of England. With the exception of the years, from 1818 to 1821 inclusive, when the Company suddenly expanded their importation of stuffs into the East-Indies, this branch of their trade gradually declined, and for the last five or six years had become nearly extinct, whilst the private trade, as shewn in the under-printed table,\* had risen to a flourishing condition.

AN ACCOUNT OF STUFFS, viz:—CAMBLETS, SERGES, &c., EXPORTED FROM GREAT BRITAIN TO ALL PARTS EASTWARDS OF THE CAPE OF GOOD HOPE, (EXCEPT CHINA,) AND WHETHER EXPORTED BY THE EAST-INDIA COMPANY OR BY PRIVATE TRADERS, IN EACH YEAR FROM 1814 TO 1832 INCLUSIVE.—

	EAST-INDIA COMPY.		PRIVATE TRADE.		TOTAL.	
	PIECES.	DECLARED VALUE.	PIECES.	DECLARED VALUE.	PIECES.	DECLARED VALUE.
		£		£		£
1814	4,911	24,025	310	974	5,221	24,999
1815	2,161	8,295	996	2,730	3,157	11,025
1816	1,999	5,923	944	3,189	2,943	9,112
1817	220	721	1,902	6,254	2,122	6,975
1818	6,458	13,225	4,692	13,038	11,150	26,263
1819	28,061	74,440	1,977	8,101	30,038	82,541
1820	33,581	92,184	4,530	10,504	38,111	102,688
1821	26,050	70,957	10,019	28,704	36,069	99,661
1822	1,418	5,037	11,257	39,204	12,675	44,241
1823	20	87	7,924	30,021	7,944	30,108
1824	1,310	7,145	12,433	39,658	13,743	46,803
1825	1,710	6,781	8,028	24,714	9,738	31,495
1826	7,839	40,253	15,524	35,668	23,363	75,921
1827	1,743	3,388	17,893	43,718	19,636	47,106
1828	355	903	15,689	39,220	16,044	40,123
1829	543	907	31,037	86,332	31,580	87,239
1830	94	302	20,148	49,129	20,242	49,431
1831	251	352	14,767	40,757	15,018	41,109
1832	56	84	18,909	42,801	18,965	42,885

\* Porter's Tables, part 3, pages 340-347.

Until the year 1832, figured goods were, with few exceptions, produced by the ingenuity of the weavers, whose labours in weaving large figures (such as damasks) were of the most tedious and laborious description. Although the Jacquard loom had been invented in the latter part of the last century, its adoption was even tardy in France the country of its birth, but in England it is wonderful that its remarkable powers were not, until a very late date, put to any practical test. The beautiful contrivance of Jacquard does not seem to have been imported into the worsted trade until about the year 1827, when Mr. James Ackroyd, Jun., of Old Lane, Halifax, purchased a Jacquard engine of Mr. Sago, of Manchester, for the purpose of weaving damasks. Mr. Ackroyd afterwards had some of these engines made at his own establishment, but they did not succeed, and the great cost of the machine when purchased from the French agent, checked its use. About the year 1832, however, they began to come into more extensive use, and some parties in the locality having succeeded in making good working engines,\* henceforward they progressively spread throughout the whole district, facilitating the production of the choicest figures in stuffs at a small cost, and giving that impulse to the fancy trade of Halifax and Bradford which is yet retained.

Taken altogether, the year 1833, both as regards the rapid sale of goods and the remunerating prices obtained, stands among the most prosperous periods in the worsted trade. In January of that year it is recorded, that in Bradford market unusually large numbers of stuffs were sold; and during

\* Among those in this neighbourhood who deserve to be especially named for their services in improving and rendering the Jacquard engine applicable to the worsted business, may be mentioned Mr. Dracup, of Horton. He commenced making these engines in 1833; they had been introduced into Horton in 1832, and were used at first with two treadles on plain ground, and could only be worked by hand. Soon afterwards the figures began to be woven by the engine upon twilled goods. It is stated that Mr. Thomas Ackroyd, of Horton, set the first Jacquard engine to work by power in the neighbourhood of Bradford. It is worthy of note connected with this subject, that Mr. Dracup made the first card cutting machine in the year 1833, and in the succeeding year he produced his Repeater, a kind of stereotype for designs.



February this prosperity continued. Throughout March and April the finer qualities of goods were especially in request. The favourable alteration made in the tariff by the United States tended to increase the export of stuffs to that quarter. During this year they were greatly augmented. Throughout the summer the call for six-quarter merinos became so excessive that it could not be complied with. The prices for them much advanced, and the wages of the weavers were increased to stimulate their industry. At midsummer, an obstacle to the progressive prosperity of the stuff trade arose from a turn-out of the dyers, but this soon passed away. In August, plainbacks and three-quarter merinoes were most in request. Fine qualities of six-quarter merinoes were not wanted, only the middle and low sorts. During the autumn low qualities of narrow and four-quarter plainbacks and three-quarter merinoes found good sale; but the six-quarter varieties of merino were not required. Owing, in part, to the rise of wool in November, and the advanced season, trade became dull, and continued so until the close of the year.

The year 1833 is also characterised by the passing of the Factory Act,\* which essentially modified and improved the position of the infant operatives in our mills, and also, in

\* The history of the Factory Act is shortly this:—In the year 1825, John Wood and John Rand, Esqrs., with some others, had come to the conclusion that ten hours was the utmost time that children of tender age should be worked in mills. Afterwards Sir John Hobhouse brought in a Bill for limiting the hours of labour in cotton factories to eleven hours and a half, which, after much contest, was passed. The Act did not, however, apply to the worsted manufacture. Then came Mr. Sadler's labours to obtain a ten hours' Act applicable to *all* factories, when, after much discussion, the question was referred to a Select Committee, who took very voluminous evidence. Mr. Sadler having lost his seat in Parliament in the meantime, Lord Ashley took charge of the Bill, and happily, notwithstanding a strenuous opposition, the measure was triumphantly carried through Parliament. Among those who contributed, in a large degree, to the success of the measure may be mentioned three in this neighbourhood, John Wood and Charles Walker, Esqrs., and the Rev. G. S. Bull. Bradford was the very centre, the head quarters, the mainspring of the agitation in favour of the Bill, and its success was more owing to Bradford than to any other town. Previous to the passing of the Act, the regular hours of work in Bradford and other places in the worsted district were from six in the morning to seven in the evening, (thirteen hours) with thirty minutes cessation at noon for dinner, but none for breakfast. Mr. Wood was the first to grant to his mill hands time for breakfast.

some respects, that of the adult ones. A commission had, after much debate in Parliament, been issued to inquire into the condition of factory operatives, and any one who has impartially perused the various voluminous reports of the Commissioners, must be convinced that protection to infant operatives was much needed. Though with pleasure it may be recorded, that in general the cases of cruelty and hardship among worsted spinners and manufacturers were much fewer, and of a lighter description than those in the woollen, and especially the cotton manufacture, yet it is grievous to state that many instances were brought to light of the habitual illusage, and overworking of children of tender age by employers in the worsted trade. But these were exceptions to the merciful rule which generally prevailed in the worsted factory, and to protect the weak against the oppressor this law was passed. All such measures interfering with the internal affairs of manufacturers, are, in their very nature, against the true policy of trade, unless *imperatively* required by particular and extraordinary circumstances, which here arose. Thus to keep within bounds the oppressor, it became incumbent to couple the just and merciful master in the same trammels. As the provisions of the Factory Act do not exclusively relate to the worsted manufacture, and as they are multifarious and well known, it is needless to incumber these pages with more than a meagre outline of them:—

No night-work was permitted between half-past eight and half-past five o'clock. No person under eighteen years of age to be employed more than twelve hours a day, or sixty-nine hours a week, except where time had been lost from stoppage of machinery, for which special provisions were framed, No child under thirteen years of age, to be employed for a longer time in any mill than forty-eight hours in one week; and that a medical certificate of the child's age should be required previous to employment in the mill.

One of the most important enactments, however, concerned the education of these children, it being incumbent upon them to attend school for two hours during each of the six working days of the week.

A most desirable order was also made, which has proved of immense service in a sanatory point of view, namely, a declaration that the interior walls of the factory should be whitewashed once a year.

To secure attention to the provisions of the Act, superintendents and inspectors were appointed to enforce them.

At the time this alteration occurred in the position of the factory operatives, their wages were high. In consequence of the prosperous condition of the worsted business, the operatives were fully employed, and obtained good remuneration, as shewn in the subjoined statement of wages given in the factory of one of the largest and most eminent firms in Bradford.\*

RATE OF WAGES PAID IN A WORSTED MANUFACTORY AT  
BRADFORD, YORKSHIRE, SEPTEMBER 21<sup>ST</sup>, 1833.

DESCRIPTION OF WORKPEOPLE.				WAGES PER WEEK.		
				£	s.	d.
Wool-Sorting ..	{	Overlookers..	..	2	0	0
		Men..	..	1	7	4
		Boys	..	0	8	0
Wool-Combing..	{	Overlookers..	..	2	0	0
		Men..	..	0	16	2
	{	Boys	..	0	7	0
		Overlookers	..	1	7	0
Preparing ..	{	Young Women	..	0	8	0
		Overlookers..	..	1	5	0
Spinning ..	{	Boys }	..	0	4	7
		Girls }	..			
		Overlookers..	..	1	0	0
Reeling, &c. ..	{	Young Women	..	0	7	9
		Overlookers..	..	0	10	0
Hanking ..		..	..	0	10	0
Warehousemen..	{	Men..	..	0	18	0
		„ ..	..	1	2	0
		Overlooker ..	..	1	14	0
Mechanics ..	{	Men..	..	1	5	0
		Boys	..	0	7	6
Engineman	..	..	..	1	1	0
Gasman ..	..	..	..	1	5	0
Carters ..	..	..	..	0	18	0
Porter ..	..	..	..	0	15	0
Watchman	..	..	..	1	0	0
Labourers	..	..	..	0	15	0

With the passing of the Factory Act, the prosperity of the worsted district did not, as was loudly prognosticated by the opponents of the measure, decline. On the contrary,

\* Porter's Tables, part 3, page 419.



the succeeding period was one of augmented activity. For, as previously recorded, the year 1833 exhibited every mark of a flourishing trade, and with the exception of the first three months, the following year was one of like character. Owing to the most unprecedented high rate which wool attained in the month of January, 1834, and the impossibility of obtaining corresponding prices for pieces, the markets were, as a consequence, very flat, and notwithstanding the diminished consumption, wool continued to rise. This state of trade continued during the two ensuing months, but in April wool lowered in price, and the yarn and piece markets regained their former condition, Narrow plainbacks being in larger demand than other species of goods, some advance in price on them was obtained, but broad goods remained stationary in value. By June, the sales of all descriptions of stuffs had become much larger, thus raising prices especially for three-quarter and six-quarter merinoes, and also lastings which were now extensively bought for the American houses. Towards Autumn, the continental merchants purchased plainbacks and narrow merinoes freely, which they had not done in the previous months, but any deficiency arising from that cause received more than a counterbalance from the excellence of the home market since March. A fair and steady trade continued until the end of November, when the demand slackened and the prices lowered. Throughout the year, lasting warps and weft were singularly in request, and often could not be supplied in sufficient quantity.

To meet the increasing demand for fine worsted yarn, which not only was in much request at home, but also abroad, the chief spinners were constantly introducing improvements in machinery and modes of handling their wool. In the year 1831, what was termed the dead spindle, an American invention, began to be applied to the spinning frame instead of the fly spindle, whereby a much finer yarn could be produced, though somewhat at the expense of smoothness, because the fly spindle peculiarly pressed and rendered the yarn smooth and firm. This dead spindle yarn was, however, particularly suitable for making merinoes, which formed one of the

best branches of Bradford industry. But perhaps the year 1834 witnessed the greatest improvement which has been effected in spinning machinery during this century, namely the application of the screw gill, for which Mr. Fairbairn, of Leeds, obtained a patent. By his process the fibres of the wool were kept straight, and thus produced a much more even drawing, and twisted the thread firmer. At first the invention was especially applied to spinning finer sorts, but since, its use has spread to every description of yarn. The best spinners especially desired, at this period, to obtain a thread combining softness and strength, and by blending long wool to give strength, with short Down wool to fill up the thread and give it softness, they accomplished their object. The fineness and softness of the thread, in most instances, had become less desirable than formerly, because power looms were fast sweeping away the occupation of the hand loom weaver, who could wind strong thread much better.

With inventions in spinning, new fabrics also sprung up. Lately a new article, termed Saxon camblet, though woven plain like a wildbore, had been produced. These, afterwards designated Saxonies, were altogether constructed of worsted, the warp formed of good qualities of half-bred English and Botany wool, spun to 28s, and the weft (36s) from South-Down wool. Such a piece was peculiarly soft and full in the finish. Another fabric came into the market about this time, and under the singular name of gambroons, were first manufactured by Messrs. Buckley, of Todmorden, the yarn being composed of separate threads of cotton and worsted twisted together. These stuffs were adapted for men's coats, &c., and have since been extensively manufactured.

Some slackness in the stuff markets in the early part of January, 1835, arose from the excitement of the General Election which diverted attention from the ordinary affairs of business. In the latter part of the month, sales were good, especially for narrow wildbores, and also for merinoes and lastings, and this improvement continued progressive to the month of April, when the inquiries for narrow and broad merinoes, narrow wildbores, plainbacks, and moreens had

become so extensive that the accumulated stocks were cleared off, and the orders of middle qualities of three-quarter merinoes, and fine qualities of six-quarter ones, could not be supplied. These were chiefly purchased for the foreign market, at a considerable advance in price. Previous to the latter part of May, the call for pieces was not so urgent, and by the end of July the markets were duller, when the home trade set in very brisk, and business continued steady until the Autumn. Figured goods, termed French figures, had been brought into the market in very small numbers by Messrs. Ackroyd and Son, in the preceding year; but now their sale had grown to be of consequence. The *Bradford Observer*, under date September 19th, thus alludes to these fabrics:—"There is a considerable demand for fine fabrics of a new description of goods latterly introduced into this market six-quarter wide figures, of varied rich and elegant patterns, which are expected to be worn for garments and ladies' cloaks this season. Also, a new article in six-quarter wide plains, or Saxony cloths, which are manufactured in various patterns and much sought after. These fine descriptions of goods afford better wages to the weavers, who are indisposed to weave low qualities." To the end of the year, the stuff market, in all its branches, continued in a flourishing condition, and both the spinners and manufacturers were fully and lucratively occupied.

Proceeding to the year 1836, it commenced with a brisk sale of goods, raising, before the end of January, the demand so excessively as to cause an advance in price equal to two and a half per cent. and in some cases five. This buoyant state of business even increased during February, particularly in six-quarter merinoes for foreign consumption, and markets continued good throughout March, but in the beginning of April, the sales of five-eighth, three-quarter and four-quarter plainbacks and other pieces declined. During the months of May, June, and July, the markets for all descriptions of goods, and chiefly six-quarter merinoes, continued steady at remunerating prices. In the month of August, the sale of three-quarter merinoes, compared with



that of last year, had much decreased, whilst six-quarters, together with Indianas and double twills, had greatly increased in sale, and were at higher rates. Indeed, up to the middle of September, the stuff trade in Yorkshire stood in a highly flourishing position, but then signs of depression were unmistakeable. At the commencement of October, the markets were uncommonly heavy for lower qualities of goods, and afterwards to the end of the year, trade remained in a very depressed state.

Many estimates have, as before noticed, been from time to time formed of the quantity of wool produced in the kingdom. For instance, Gregory King calculated the number of English sheep in 1700 to be twelve millions, their produce at forty millions of pounds per year, and its value at £2,000,000. In 1741, the writer of the 'Short Essay' (see page 233 ante) estimated the number of sheep in Great Britain at sixteen millions six hundred and forty thousand, and their produce at sixty-two millions nine hundred thousand pounds. In 1774, Arthur Young made his estimate, fixing it at twenty-five millions, five hundred and eighty-nine thousand, seven hundred and fifty-four sheep, and weight of fleece yearly at seventy-six millions, seven hundred and sixty-nine thousand, two hundred and sixty-two pounds. In 1800, Mr. Luccock estimated the sheep at twenty-six millions, one hundred and forty-eight thousand, four hundred and sixty-three, and the wool at eighty-three millions and forty thousand pounds. Mr. Hubbard, in 1828, took the number of sheep to be the same as Mr. Luccock, but augmented the produce to one hundred and sixteen millions pounds. In 1834, Mr. Youatt, a very accurate authority, estimated the yearly quantity of British grown wool at one hundred and eight millions pounds, and (to anticipate a few years for the sake of comparison) Mr. McCulloch, a correct writer on these subjects, calculates that in 1840 we had thirty-two millions of sheep, producing one hundred and twenty-four millions eight hundred thousand pounds weight of wool every year.

Supposing, therefore, the total quantity of wool grown in Great Britain to be in 1835, about one hundred and eight

millions of pounds, let us endeavour to calculate the amount used in the worsted trade of the West-Riding in that year. Making the amount of drawback the basis of this estimate, it appears that the whole quantity of wool consumed in that district in the preparation of stuffs amounted to about forty-five millions of pounds weight, approaching to half of the whole produce of the kingdom. For although foreign wool is included in the above calculation, yet its use was yet very limited in the worsted department, and does not materially affect the question. The increase in the consumption of long wool had been steady during the last five years though not quite so great as previously. Bradford trade had especially not much developed itself, the increase mainly arising in the Halifax trade; that at Keighley had somewhat declined; whilst the consumption of long wool in the Wakefield district had been doubled since the year 1830. Altogether these forty-five millions of pounds weight of wool give, according to the rule before laid down, above £9,000,000 sterling as the value of the worsted manufacture in the West-Riding. Mr. Youatt calculates the whole value of the manufactures from wool inclusive of material at £27,000,000 sterling, but McCulloch, in 1840, makes it only £24,000,000 of which the West-Riding worsted manufacture constituted at least one third. Nor did the foreign trade in stuffs diminish, but in some years had vastly extended, as the subsequent table exemplifies.

No particular remark is required upon this table. The quantity of goods sent to Germany had decreased. Holland and Belgium had since their separation consumed more English stuffs. The export to the East-Indies and China\* had declined, and also to Italy. America had become our chief and best customer.

\* The East-India Company exported long ells to all places eastward of the Cape of Good Hope, except to China, to the following amount:—

YEAR.	PIECES.	VALUE.	YEAR.	PIECES.	VALUE.
1811	211,220	£516,023	1825	176,400	£374,151
1815	126,040	£359,469	1830	150,300	£213,277
1820	126,000	£312,382	1833	88,300	£137,426

## EXPORT OF WOOLLEN AND WORSTED STUFFS.

	1832	1833	1834	1835	1836	1837
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.
Russia .. ..	47,028	28,309	26,498	26,510	38,548	33,884
Sweden .. ..	4,533	4,222	7,109	9,091	3,862	7,269
Norway .. ..	1,743	3,265	3,466	5,366	4,104	2,689
Denmark .. ..	536	885	674	1,040	732	855
Prussia .. ..	97	10	36	39	82	9
Germany .. ..	725,506	451,922	382,158	405,545	271,123	387,373
Netherlands ..	142,168	108,949	118,869	..	..	..
Holland .. ..	..	..	..	83,189	71,888	85,964
Belgium .. ..	..	..	..	47,172	63,469	59,748
France .. ..	15,862	20,268	22,173	26,608	20,994	18,505
Portugal, A- zores, & Ma- deira .. ..	12,505	20,061	34,671	44,546	25,268	23,030
Spain & the Canaries .. ..	21,870	49,903	22,410	18,493	13,372	12,179
Gibraltar .. ..	4,240	1,916	1,357	5,043	7,230	7,251
Italy .. ..	113,484	90,337	107,515	128,393	92,880	66,913
Malta .. ..	1,415	3,917	2,411	2,878	2,226	1,480
Ionian Islands	116	284	411	900	721	528
Turkey & the Levant .. ..	7,960	5,960	6,808	10,880	8,965	4,702
Morea, and Greek Isles ..	..	70	750	156	18	12
Guernsey, Jer- sey, Alder- ney, & Man	4,996	3,625	3,145	4,244	3,172	3,563
East Indies & China .. ..	178,895	199,665	77,988	124,179	145,578	77,912
New Holland	3,613	4,482	5,303	2,418	4,579	4,897
Cape of Good Hope .. ..	7,555	6,898	5,796	6,079	8,416	10,794
Other parts of Africa .. ..	3,381	1,032	3,355	4,748	5,134	3,734
British North American Colonies .. ..	51,706	61,454	30,854	55,985	51,620	33,287
British W. Indies .. ..	13,747	14,457	10,195	15,988	19,402	16,991
U. S. of Ame- rica .. ..	336,897	511,701	342,323	560,160	460,751	127,381
Foreign W. Indies .. ..	18,312	8,870	12,413	11,870	11,507	8,219
Brazil .. ..	48,026	50,770	34,756	38,017	45,831	18,547
Mexico & the States of S. America .. ..	34,523	37,325	35,331	33,532	24,528	23,920
Totals ..	1,800,714	1,690,559	1,298,775	1,673,069	1,406,000	1,041,636



Altogether, the interval from the year 1832 to the month of September, 1836, may be regarded as among the most prosperous periods in the history of the West-Riding stuff trade, and so much had the spinners and manufacturers exerted themselves, that the accessions to their capital were evident in the numerous mills which were reared, in the trade of the district being extended and stimulated, and provision made for any season of disaster, so that in the depression of trade which ensued, it was found they were prepared for the day of trial.

Hitherto the history of the worsted manufacture has, in the main, been that of fabrics made wholly from wool. Henceforward the character of the manufacture becomes changed by the introduction of those mixed textures, which have given such an extension and impulse to the stuff trade of the West-Riding.

Number of worsted mills, &c., in the West-Riding and Lancashire. In the other portions of the kingdom the returns do not distinguish the worsted from the woollen.

	No. of Mills.	STEAM.		WATER.		Children between 9 & 11.	Young Persons between 11 & 18.	Total Number of Hands.
		No. of Engines	No. of Horse Power.	No. of Wheels	No. of Horse Power.			
<i>Yorkshire, W. R.—</i>								
Addingham ..	3	1	8	3	21	30	43	104
Bingley .....	14	12	156½	8	66	84	388	788
Birstal. ....	5	5	112			8	247	468
Bradford ....	73	65	1455	30	192	467	4586	7548
Burnsall .....	1			1	8	4	19	34
Calverley ....	4	3	40	2	28	31	150	240
Dewsbury ....	3	3	59			10	113	149
Gargrave ....	1	1	18				60	97
Guiselley ....	1	1	14			7	32	46
Halifax .....	45	34	750	25	201	258	1916	3606
Hoyland .....	1	1	30				32	40
Keighley.....	22	9	107½	15	181	53	613	1061
Leeds(Borough)	6	6	151				650	799
Linton .....	2	2	38			14	64	182
Otley .....	10	8	91	11	96	34	307	500
Selby .....	1	1	24					12
Skipton .....	2			3	18	7	20	40
Wakefield ...	10	10	188	1	6	12	379	1028
	204	159	3186	102	873	1028	9619	16742
<i>Lancashire—</i>								
Manchester....	1	1	36				59	120
Whalley .....	5	5	75	3	34	6	124	347
Garstang.....	2	1	12	2	68		237	609
	8	7	123	5	102	6	420	1076

## CHAPTER XI.\*

## ALPACA AND MOHAIR MANUFACTURES.

**ALPACA.**—Early use of Alpaca Wool in Peru.—Description of the Alpaca.—Attempts to naturalize it in England.—Unsuccessful—First use of Alpaca Wool in England.—Manufactured by Mr. Outram, of Greetland.—Afterwards others attempted it at Bradford.—Alpaca Figures made.—The success of Mr. Salt.—Combined with Cotton Warps.—Progress of the Manufacture.—Processes described.—Articles made from Alpaca.—The Llama and Vicuna.—Table of Imports of Alpaca Wool into the United Kingdom.

**MOHAIR.**—Antiquity of the Manufacture from Goat's Hair.—Description of the Angora Goat.—Mohair Yarn imported from the Levant in remote times.—Introduction of the method of Spinning it in England, by Machinery.—Success of the Process—Mostly spun and manufactured in the neighbourhood of Bradford.—Articles made from Mohair.—Lately to some extent superseded by Alpaca Textures.—Table of the quantities of Mohair imported into the Kingdom since 1843.—Superiority of the English Manufacture over the French.

**SALTAIRE.**—Description of the Works, and the Town of Saltaire.

More than any other textile manufacture in the kingdom, that of worsted enlists into its service materials of various and dissimilar kinds, from the most remote parts of the globe. Besides the produce of English soil, we have wool from Germany and Australia; silk from China, the East-Indies, and the Levant; cotton from America and other quarters; Mohair from the goats of Angora, and lastly the soft-haired wool of the Alpaca. The introduction of the latter articles has imparted a mighty impulse and extension to our worsted

\* In preparing the historical part of this chapter, Mr. Walton's interesting work, 'The Alpaca,' (published in 1844;) Mr. Southey's valuable work on Colonial Wool, (London, 1846, also Continuation to 1851;) and Mr. Forbes's masterly Lecture on the Worsteds Manufacture, have been consulted. The Author has also obtained important information from the most extensive Alpaca and Mohair manufacturers.

trade, added greatly to the variety of fabrics comprised therein, and whilst giving employment and sustenance to thousands, has largely increased the wealth and resources of the nation. These, (Alpaca and Mohair) therefore, demand in the history of the worsted manufacture, a lengthened notice.

THE ALPACA MANUFACTURE.—To commence with the earliest mention of the Alpaca, we must recur to so early a period as the year 1525, when Pizarro and his ferocious companions invaded Peru. It is related by the Spanish historians that they found there four varieties of sheep: two, the Guanaco and the Vicuna, in a wild state ranging the mountainous tract of South America; and the others, the Llama and the Pacos or Alpaca, domesticated. The former of these domestic animals partaking somewhat of the nature and size of the Arabian camel, was in like manner employed as a beast of burden. Though, in many features, similar to the Llama, the Alpaca had several clear marks of distinction, and among others was less, and the fleece much longer and softer in fibre. In the sixteenth century, and even from the remotest times, the Peruvians, being comparatively (to the other tribes of the great Continent of America) a civilized people, and well acquainted with the arts of spinning and weaving, fabricated from Alpaca wool, textures of much delicacy and beauty, which were highly prized as articles of dress. And that the use of them had prevailed for centuries is demonstrated by the opening of several very ancient tombs of the Peruvians, in which the dead had been enwrapped in stuffs made from the fleece of the Alpaca.

In general, the Alpaca ranges about four feet in height, the size of a full grown deer, and like it, is of graceful appearance. Its fleece is superior to the sheep in length and softness, averaging six inches,\* and sometimes it has been procured even of an extraordinary length; a specimen shown at the Great Exhibition, by Messrs. Walter Milligan and Son, reaching to forty-two inches in length. The fleeces when

\* The length of the staple of the Alpaca fleece is on an average much less than formerly, probably from being shorn oftener.



annually shorn range from five to six pounds. Contrary to experience in other descriptions of wool, the fibre of the Alpaca fleece acquires strength without coarseness, besides each filament appears straight, well formed, and free from crispness, and the quality is more uniform throughout the fleece. There is also a transparency, a glittering brightness upon the surface giving it the glossiness of silk, which is enhanced on its passing through the dye-vat. It is also distinguished by softness and elasticity, essential properties in the manufacture of fine goods, being exempt from spiral, curly, and shaggy defects; and it spins, when treated properly according to the present improved method, easily, and yields an even, strong, and true thread.

With all these remarkable qualities, it was long before the value of Alpaca wool was known or appreciated in this country. True, in respect of the beauty of its form and its docile nature, attempts had, more as a matter of curiosity, been made to naturalize this interesting animal, in the early part of the century. A brief narrative of these attempts will not be out of place in these pages. The first specimen of the Alpaca seen in this kingdom is stated to have been in the possession of Mr. De Tastet, of Halshead, in Essex, so early as the year 1809. It was afterwards transferred for exhibition to the Surrey Zoological Gardens, and continued there for many years. In the meantime, the Duchess of York maintained, at Oatlands, four or five Alpaca pets, but from none of these did any increase ensue. In 1817, D. Burnett, Esq., of Farringdon House, Berks., received a couple of Alpacas, and from this stock he reared fifteen young ones. Viscount Ingestre also, in 1825, imported two Alpacas which bred. They were shorn once or twice, and the produce being fabricated into cloth was, it is related, "of the finest texture possible." The Viscount eventually presented his flock to the Zoological Society. The next person, who devoted much attention to the naturalization of the Alpaca, appears to have been Thomas Stevenson, Esq., of Oban, Argyleshire, but he did not succeed in his endeavours. Afterwards, the late Earl of Derby entered into the enterprise with great spirit,

and writing, in the year 1841, to Mr. William Danson, of Liverpool, who evinced great interest in the subject, expresses himself in this hopeful manner:—"I certainly know of nothing likely to prevent the propagation of the animal in this country. On the contrary, the gentlemen visiting Knowsley Park will see in these grounds that they can and will do so;" but he afterwards changed this opinion. The flock of the Earl of Derby eventually came into the hands of Titus Salt, Esq., who has devoted much attention to their management. He possesses upwards of a dozen of them, and after careful observation, has arrived at the conclusion that it is impossible to so far naturalize the species as to make it a stock animal worthy the attention of the breeder. It can, indeed, endure, as might be conceived of a native of the shelves of the Andes, the most intense cold, but it is utterly unable to withstand, without more care than can be bestowed upon it ordinarily, the humidity of our climate.\* The question of its naturalization may, therefore, be considered as decided in the negative.

Recurring to the application of the Alpaca fleece to manufacturing purposes in England, it was long delayed. Though, so early as the year 1807, the British troops returning from the attack of Buenos Ayres brought with them a few bags of this wool which were submitted for inspection in London, but observes Walton, in his work on the Alpaca, "owing to the difficulty of spinning it, or the prejudice of our manufacturers, it did not then come into notice," and for more than twenty years the attempt does not seem to have been renewed, thus depriving, for that period, the country of the advantage derived from this notable manufacture.

According to the best authorities, the first person in England who introduced a marketable fabric made from this material, was Mr. Benjamin Outram,† a scientific manufac-

\* The Alpaca is also subject to serious diseases, and therefore, in that respect, demands great care.

† The authority for this important statement is a Paper "on the Rise, Progress, and Extension of Alpaca Manufacture," read by Mr. William Danson, (a Woolbroker of Liverpool, who devoted much attention to the Alpaca,) before the Liverpool Polytechnic Society, in February, 1842.

turer, of Greetland, near Halifax, who, about the year 1830, surmounted, with much difficulty, the obstacles encountered in spinning the wool, and eventually produced an article which sold at high prices for ladies' carriage shawls and cloakings, but their value arose more from being rare and curious articles than from intrinsic worth. These were, it is well established, quite destitute of the peculiar gloss and beauty which distinguish the Alpaca lustres and fabrics of later times, and after a short period the manufacture was abandoned.

About the same time as Mr. Outram was weaving goods from Alpaca, the wool attracted the notice of the Bradford spinners. Messrs. Wood and Walker spun it to some extent for camblet warps used in the Norwich trade. Owing to the cheapness of Alpaca wool during the first years of its consumption in England, it was occasionally employed instead of English hog wool for preparing lasting and camblet warps, being spun to about No. 48.

The earliest manufacture of the Alpaca wool into goods at Bradford, appears to have occurred under these circumstances. In the commencement of 1832, some gentlemen connected with the trade to the West Coast of South America were on a visit at the house of J. Garnett, Esq., of Clithero, and on their alluding to the difficulty of meeting with suitable returns for goods forwarded to that part of the world, he suggested to them the transmission of Alpaca wool, and offered, if they would send him a few pounds weight, to ascertain its value for manufacturing purposes.\* In a few months he received some samples of Alpaca wool which, on the 2nd of October, 1832, he forwarded to Messrs. Horsfall, of Bradford, with a request that they would test its value. Accordingly they fabricated from this wool a piece resembling a heavy camblet, which they showed to some of the Leeds merchants; but the piece not developing any peculiar qualities of Alpaca did not please, so that Messrs. Horsfall were not encouraged to proceed further with experiment. However in the same year, 1832,

\* These particulars have been extracted from Mr. Garnett's Letter.



Messrs. Hegan, Hall, and Company, spirited merchants of Liverpool, perceiving the value of the Alpaca wool, directed their agents in Peru to purchase and ship over all the parcels of Alpaca wool they could meet with, some of which being sent to the Bradford district was spun and manufactured by several parties there. The pieces chiefly fabricated from Alpaca in the neighbourhood of Bradford were figures made with worsted warp and Alpaca weft, the figure being raised and lustrous like union damasks. These goods were in vogue only for a limited time ; altogether neither these figured goods, nor some plain ones made of worsted and Alpaca, seem to have suited the public taste for any length of time.

Until the introduction of cotton warps into the worsted trade, it may safely be averred that the Alpaca manufacture had not been developed, and would never have made much progress without being combined with cotton or silk warp. To Titus Salt, Esq., of Bradford, must, undoubtedly, be awarded the high praise of finally overcoming the difficulties of preparing and spinning the Alpaca wool so as to produce an even and true thread, and by combining it with cotton warps, which had then (1836) been imported into the trade of Bradford, improved the manufacture so as to make it one of the staple industries of the kingdom.\* He has, by an admirable adaptation of machinery, been enabled to work up the material with the ease of ordinary wool, and thus present beautiful Alpaca stuffs at a reasonable rate. Every previous attempt had been made, so far as can be ascertained, with worsted warps, with which the Alpaca did not easily assort.

Among the early spinners and manufacturers of Alpaca must also be mentioned Mr. R. Stables Ackroyd, Bradford ;

\* Mr. Walton observes, (in 1844,) on this subject as follows :—"The greatest share of the spinning and weaving of this article falls to Bradford, where plain and figured stuffs are produced, the warps of which are of cotton, and the weft of Alpaca wool, with a beautiful lustre upon them. It is this constant endeavour to devise new and attractive styles of goods that has fed the market, and kept some thousands of our weavers employed, who otherwise must have been dependent upon their parishes for support. In this respect, Bradford has been singularly fortunate, where great credit is due to Mr. Titus Salt, through whose intelligence and perseverance the spinning of Alpaca wool has been brought to great perfection."

Messrs. J. & J. Craven, Keighley; and Messrs. Milligan and Jowett, Bingley; who contributed, in some measure, to the success of this peculiar manufacture. Mr. Robert Milligan has favoured me with a communication on the subject, from which the following is extracted. "It was during the spring of the year 1839, that Titus Salt, Esq., with whom we had sometimes done business in worsted yarns, introduced to our notice Alpaca yarn. Several attempts had been made by manufacturers to use this article in combination with worsted warp, or as warp, but the manufacture did not prove successful, until the production of what we termed 'Alpaca orleans,' formed of cotton warp and Alpaca weft. The first entry of these goods in our books is an invoice to Mr. Salt, in June, 1839, of two pieces of Alpacas at seventy-six shillings per piece. The first considerable order which we undertook for 'Alpaca orleans' was on the 19th June, 1839, for five hundred and sixty pieces, 27 inches wide, at forty-two shillings per piece, proving, at this date, that our practical difficulties had been successfully overcome. Then became established, the Alpaca trade which has since risen to so much importance. At this time, Mr. Salt was the only spinner of Alpaca weft in Bradford."

After this period, the manufacture rapidly extended. The great mercantile house of A. & S. Henry took very large quantities of Alpaca stuffs, which began to be made in an endless variety of goods suited both for male and female dress, and including scarfs, handkerchiefs, and cravats, plain and figured goods, both with silk and cotton warp, for ladies' dresses, dyed Alpaca checks of beautiful texture, and a variety of grograms, codringtons, silk-striped, checked, and figured Alpacas and Alpaca linings. The demand for these various Alpaca fabrics during the period between 1841 and 1846, remained uniform and steady.

At the commencement of the manufacture of Alpaca goods, with cotton warps (silk was not used,) the weft was spun from fine qualities of the wool into low numbers, and the pieces were made much richer and heavier than has been the case more recently, the demand having altered in favour of lighter and less costly cloth.



Most of the Alpaca wool brought into the United Kingdom is unshipped at Liverpool, but a small portion is also carried to London. At these two ports, it may be asserted, the whole imported into this country is landed. It arrives in small bales, called ballots, weighing about seventy pounds, and is generally in an impure state, with different qualities mixed. Like the fleece of the sheep, that of the Alpaca is composed of different qualities, so that the portion growing on the hind quarters is of an inferior description. The wool is sorted into about eight different qualities, each fitted for a particular class of goods. Owing to the dirty state of the fleeces, and the peculiar nature of the dusty particles arising during the progress of sorting, the operation is an unhealthy one, unless great care be taken by ventilation to counteract this baneful effect. After being sorted, it is at Saltaire washed and combed by machinery. Until of late years it was combed wholly by hand, and the combs used for the purpose were of a deeper pitch than those usually adopted for preparing sheep's wool, that is, those combs had a larger number of teeth than ordinary. The next process is to draw the sliver, which is perfected by an improved gill machine, especially adapted for this material. And here, in combing and preparing the Alpaca wool, so as to make a clean, even, and glossy thread, lay the grand difficulty in the way of applying the Alpaca fibre to the worsted manufacture, and which was so successfully surmounted by Mr. Salt.

The main articles now manufactured from Alpaca wool consist of Alpaca lustres, which are dyed, and Alpaca mixtures, which are undyed, and both are made of cotton or silk warp. These plain goods may, from their extensive and steady use, be termed stock articles. Large quantities of fancy Alpacas are made, but they are rapidly varying, and are distinguished by innumerable names. The material is, at present, much shorter in staple than formerly, owing to the Alpaca being shorn oftener, so that it is now commonly from five to eight inches in length. Nearly all the Alpaca wool consumed in England is worked up in the Bradford district.

Reverting to the Llama: its wool is of a much inferior quality to that of the Alpaca, being coarser; and not above



half its value. It is sometimes mixed with the bales of Alpaca for the purposes of adulteration, but the quantity imported is small. A merchant will probably get one thousand bales of Alpaca and fifty bales of Llama fleeces, which he sells together.

Vicuna wool being short, and of a fine fibre, is principally sold to hatters and hosiers.

Dating from the year 1834 when the importation of Alpaca wool sprung up as a permanent branch of commerce, the demand in this country has, with the exception of the last two years, on the whole been a growing one.\* Mr. Walton, in his work on the Alpaca, exhibits the quantities exported chiefly to England until the year 1843, when the tariff law having come into operation, the returns began to be more correctly framed, and the Alpaca wool was then classed by itself.

YEAR.	LBS.	YEAR.	LBS.
1834	5,700	1839	1,325,500
1835	184,400	1840	1,650,000
1836	199,000	1841	1,500,000
1837	385,800	1842	1,443,299
1838	459,300		

In the interval of these twelve years, the price had, with the demand, progressively increased; the price in 1834 only amounted to about eightpence half-penny per pound; next year it reached nearly tenpence; the year after, one shilling; in 1838, to upwards of one shilling and threepence half-penny; and in 1839, to one shilling and fourpence per pound.

\* Mr. Forbes in his Lecture on the Worsted Manufacture, has the following account of the increase of the importation of Alpaca. "The advance in its consumption may be estimated from the fact, that whilst in the five years from 1836 to 1840, only 560,000 lbs. per annum were imported, last year the import had reached 27,331 ballots, or 2,186,480 lbs. weight: and the advance in price has been from 10*d.* per lb. in 1836, to 2*s.* 6*d.* per lb. in 1852."

Since the year 1842, the returns of Alpaca wool imported into this country are of a more reliable character. The following Table has been drawn up from data furnished by the Board of Trade.

YEAR.	LBS.	YEAR.	LBS.
1843	1,458,032	1850	1,652,295
1844	635,357	1851	2,013,202
1845	1,261,905	1852	2,068,594
1846	1,554,287	1853	2,148,267
1848	1,521,370	1854	1,267,513
1849	1,655,300	1855	1,446,707*

Astonishing as it may appear, the bulk of these importations have been consumed in England, and the quantity re-shipped to the Continent has been comparatively trifling in amount. For instance, in 1844, there were re-exported to Belgium and France, forty-seven thousand eight hundred and forty-eight pounds; in 1845, to the Hanse Towns, Holland, Belgian, and the United States of America, fifty-three thousand one hundred and ninety-one pounds; in 1848, only thirty-five thousand one hundred and seventy-four pounds were re-exported, but one hundred and twenty-six thousand and eighty-two pounds in 1849; whilst in 1850, the amount re-shipped reached three hundred and thirty-three thousand eight hundred and fifty-nine pounds. During the last three years, the re-export has been small, namely, in 1853, it amounted to twenty-eight thousand three hundred and sixty-five pounds; in 1854, to forty-one thousand nine hundred and seventy-nine pounds; and in 1855, to forty-one thousand and four pounds.

During the last ten years, the prices have fluctuated considerably. In 1844, one shilling and eight-pence per pound was quoted as the price of the white fleece, and two shillings

\* Extracted from Southey on Colonial Wool and the Board of Trade Returns.

for the black one. In the year 1855, according to the price currents, the average rates were thus quoted :—

	s.	d.	s.	d.
Alpaca best white .. ..	2	6	to	2 8
„ brown and black ..	2	6	to	2 8
Vicuna best dark coloured ..	3	0	to	3 6
Llama .. .. .	0	10 $\frac{1}{2}$	to	1 3

But these quotations are undoubtedly higher for Alpaca wool than the prices realized, which of late years have ranged from two shillings and twopence to two shillings and sixpence per pound.

THE MOHAIR MANUFACTURE.—Very much akin to, and in Yorkshire rising into importance about the same time as that of Alpaca, the Mohair manufacture next demands attention. The goat is amongst the earliest animals domesticated by man, and undoubtedly, from the very earliest ages, the fabrication of stuffs from its hair was practised by the nations of antiquity.\*

Throughout the middle ages the art of making beautiful stuffs from the covering of the goat prevailed. Upon reference to page 22, it will be seen that some of these stuffs were designated ‘Baracanes,’ and their manufacture afterwards spread to England.

It has often been stated in preceding portions of this work, that from an early period Mohair yarn formed a considerable item of our importations from the Levant, and that the material was wrought into camblets and other fabrics.†

A faithful and interesting description of the goat of Angora, which produces the best portion of the Mohair consumed in England, is contained in a paper read by Captain Conolly (who had visited the country) before the Asiatic Society, in January, 1840, from which the ensuing particulars are collected.

\* Furniture fabricated of goat’s hair was employed for the Jewish Tabernacle. ‘And thou shalt make curtains of goat’s hair to be a covering upon the Tabernacle’ Exodus ch. xxvi., v. 7. These curtains were of great dimensions.

† Among the importations from the Levant during the Protectorate. The camblets made from Mohair were an exceedingly expensive article.



The long-famed goat, peculiar to the province of Angora and certain adjoining districts, is invariably white, and its coat is of one sort, namely a silky hair, which hangs in long curly locks. The country around Angora\* consists in the greater part of dry chalk hills. The finest flocks are those fed on the mountains where, from the rarity of the atmosphere and the choice food, the fleeces are of a much finer quality than those borne by the goats of the lowlands. After the goats have completed their first year, they are clipped annually in April and May, and yield progressively from one to about four pounds' weight of hair. That of the female is considered better than the male's, but both are mixed together for the market, with the exception of the *two-year old she goat's fleece*, which is kept with the picked hair of other white goats (of which perhaps five pounds may be chosen out of a thousand) for the native manufacture of the most delicate articles,† none being ever exported in any unwrought state. Common hair sold in the Angora bazaar for nine piastres, or about one shilling and eightpence half-penny the oke (that is two pounds and three-quarters) whilst the finest picked wool of the same growth fetched fourteen piastres the oke. When the fleeces are shorn, the women separate the clean hair from the dirty, and the latter only is washed, after which the whole is mixed together and sent to the market. That which is not exported raw is bought by the women of the labouring families, who after pulling portions loose with their fingers pass them successively through a large and fine toothed comb, and spin it into skeins of yarn, of which six qualities are made. An oke of Nos. 1 to 3 fetched in the Angora bazaar from twenty-four to twenty-five piastres, and the like weight of Nos. 3 to 6

\* Angora is in the centre of Asia Minor.

† For instance, gloves so ingeniously wrought, that it puzzled the manufacturers of Leicester to find out where the workmanship commenced or ended. Also hosiery so skillfully made as to surprise English hosiers. The natives of Angora also wove from the finest Mohair yarn, cloths of two kinds called 'Shalli' and 'Sof,' or, twilled and plain cloth. These stuffs were dyed at Angora. Formerly the Turkish grandees wore summer garments of these stuffs which were of beautiful texture, but of late the manufacture has declined at Angora, owing to the substitution of English and French stuffs, so that where twelve hundred looms were employed, probably there are now not more than fifty.

from thirty-eight to forty piastres. Threads of the first three Nos. had been usually sent to France, Holland, and Germany; those of the last three qualities to England. The women of Angora moisten the hair with much spittle before they draw it from the distaff, and they assert that the quality of the thread greatly depends upon this operation.\*

Formerly there was a prohibition against the export from Turkey of Angora hair, except when wrought or in the form of homespun yarn, but about the time of the Greek Revolution this prohibition was removed. Up to that period, however, there had been little demand for the raw material in Europe, so that it sold in the year 1820, at only tenpence per pound in England. The reason of the raw material not being in request, arose from the belief that owing to the peculiarity of fibre, it could not be spun by machinery. It soon, however, became apparent that Mohair could be thus spun in England, and this was the more to be desired because the Angora spun yarn had so many imperfections, from being thick and uneven, as to detract greatly from its value.

The attainment of this object is mainly due to Mr. Southey, the eminent London wool-broker, who, in his work on Colonial wool, after stating that he had long before expressed a hope that the pure wool of the Angora goat could be spun by the the British manufacturer, thus describes the steps he took to accomplish it.—

“It has become a source of pleasure to me to know that this desirable object has, at length, been attained, and I rejoice to add that British Angora goats’ wool yarn is now more esteemed than that of Asia Minor. The means by which this improvement was attained I will briefly relate, not for the gratification of any personal vanity, but in order to shew what small means often produce great results. Impressed with the idea that Angora wool could be spun in England, I took a small sample of it, together with some yarn of the same material, with me when about to visit a friend at Thetford, to whom I communicated my wishes, and he gave me a letter to his agent at Norwich. After some preliminary conversation, the latter replied that if the undertaking could be accomplished he would see that it was done. In the course of a fortnight afterwards, a person came to town with a letter from my friend’s agent and procured two bales of Angora wool, which I learnt were forwarded to Bradford, in Yorkshire. Further, I proceeded on my return from

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\* Southey on Colonial Wools, pages 321-4, London, 1848.



Scotland, with a view to ascertain what parties were consuming the article, and I was not long in discovering the residence of the fortunate person who accomplished this laudable object of the manufacturer's ambition. The use of Angora wool has since extended, and I have reason to believe that both the original purchaser and manufacturer alluded to have realized a considerable sum by their discovery. To this cause, the diminution in the importation of Angora wool yarn may be attributed. It is known to the Greek merchants who were in the habit of importing Mohair yarn, that the demand for it ceased as soon as the British manufacturers began to spin the raw material, and the stock of yarn then on hand was re-shipped to Holland and the other parts of the Continent, where, since its introduction, English spun yarn of the same class is preferred."

Since then the demand for Angora handspun yarn has almost ceased, and its value in Turkey has fallen one half. Mohair is transmitted to England chiefly from the ports of Smyrna and Constantinople. In colour, it is the whitest known in the trade, and is consequently peculiarly adapted for the fabrication of a certain class of goods. Besides Angora, quantities of an inferior sort of Mohair are received from other parts of Asiatic Turkey. We learn from Dr. Bowring's *Statistics of Syria*, that goats' hair of a very fine description is sent from that country.\*

In England, Mohair is mostly spun and to some extent manufactured at Bradford, and also in a less degree spun at Norwich. Scotland is also engaged in working up Mohair yarn. At the first, great difficulty occurred in sorting and preparing the material for spinning, but by patient experiment this has been effectually surmounted, and a fine and even thread produced, fitted for the most delicate webs.

The price of Angora goats' hair has, since its importation into this country, fluctuated very much in price, partly from the variations in demand, and partly owing to the supply. When the wool was first introduced, it realized only one shilling and threepence or one shilling and fourpence per pound. During the years 1845 and 1846, it ranged from one shilling and threepence to one shilling and eightpence per pound, and about the year 1850 it sold for one shilling and ninepence to one shilling and tenpence per pound, and

\* Bowring's *Statistics of Syria*. That obtained from the neighbourhood of Antioch is the best, and much cleaner than that from other parts of Syria. A portion of this Syrian Mohair is of very good quality.



now it is sold on the average at one shilling and tenpence per pound.

Numerous articles are manufactured from Mohair. For instance, many kinds of camblets which, when watered, exhibit a beauty and brilliance of surface unapproached by fabrics made from English wools. It is also manufactured into plush, as well as for coach and decorative laces, and also extensively for buttons, braidings and other trimmings for gentlemen's coats. Besides it is made up into a light and fashionable cloth suitable for paletots and such like coats, combining elegance of texture with the advantage of repelling wet. A few years since Mohair striped and checked textures for ladies' dresses, possessing unrivalled glossiness of appearance, were in request; but of late these have been superseded by Alpaca. For many years the export of English Mohair yarn has been considerable to France. This trade is enjoyed by Bradford and Norwich, but chiefly by the former place. This yarn is manufactured in France into a new kind of lace which, in a great measure, is substituted for the costly fabrics of Valenciennes and Chantilly. The Angora goats' hair lace is as brilliant as that made from silk, and costing only about one shilling and twopence the piece, has come into very general wear among the middle classes. Mohair is also manufactured into fine shawls, selling from £4 to £16 each. Also, large quantities of what is termed Utrecht velvet, suitable for hangings and furniture, linings for carriages, are made from it abroad. Recently, this kind of velvet has begun to be manufactured at Coventry, and it is fully anticipated that the English made article will successfully compete with the foreign one in every essential quality.

When Captain Conolly wrote in the year 1839, the export from the East of Mohair yarn had almost ceased, whilst that of the hair had very greatly increased, as thus shewn:—In 1836, only five hundred and thirty-eight bales of Mohair yarn were exported, whilst that of the hair amounted to three thousand eight hundred and forty-one bales. In 1837, the export of the yarn had decreased to eight bales, and the Mohair to two thousand two hundred and sixty-one bales;

and in 1838, the large amount of five thousand five hundred and twenty-eight bales of Mohair was exported, and only twenty-one bales of the yarn.

He observes, "no yarn has been and probably none will be exported this year," (1839). "Two thousand six hundred and seventy-nine bales of the hair have been already shipped, and it may be expected that fully three thousand more will be exported before the end of the season."

There is no separate account furnished of the quantity of Mohair imported into the kingdom before the year 1843, since then the returns give the following result:—

YEARS.	LBS.	RE-EXPORTED. LBS.
1843	575,523	
1844	1,290,771	99,529
1845	1,241,623	114,001
1846	1,287,320	48,093
1848	896,865	97,977
1849	2,536,039	130,145
1850	2,805,685	961,661
1851	2,124,600	96,044
1852	2,564,330	71,734
1853	3,251,806	81,725
1854	1,335,319	107,169

The following is a statement furnished to me by the Board of Trade, of the import and export of Mohair during the year 1855:—

IMPORTED FROM.	LBS.	RE-EXPORTED TO.	LBS.
Prussia .. ..	14,448	Hanse Towns..	60,162
Turkey .. ..	2,871,011	Belgium .. ..	10,404
Egypt .. ..	10,416	France .. ..	130,512
British E. Indies	4,198	Other Parts ..	3,588
United States..	19,861		
Other Parts ..	8,477		
Total ..	2,928,411	Total ..	204,666

It is evident that the re-export of Mohair is insignificant.

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*Salisbury*

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In concluding this account of the Alpaca and Mohair industries it is interesting and very worthy of remark, that at the recent Exhibition in Paris, Yorkshire made Alpaca and Mohair fabrics were decidedly superior to those of the French. Mr. Salt, as one of the Exhibitors at the French Exhibition, was presented with the Grand Medal of the Legion of Honour, for the excellence of his manufacture of these fabrics.

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A suitable establishment was required for carrying on perfectly the manufactures of Alpaca and Mohair, and thus arose the stupendous works at Saltaire, opened by the proprietor, Titus Salt, Esq., in the year 1853. Whether this colossal structure be contemplated with respect to the magnificence and appropriateness of its architecture; the notable excellence and ingenuity of the machinery, and novel contrivances for performing all the processes of the manufacture; the admirable arrangements for ensuring the health and comfort of the workpeople, and preventing accidents from the shafting and gearing, it certainly, as the largest and best contrived of factories, stands supremely at the head of those in the worsted department, if it do not, taken altogether, bear the palm away from all others.

It would require a volume to describe in detail the various features of these wonderful works; the following is the briefest outline of them. About half a mile to the west of Shipley, in a delightful and salubrious part of Airedale, commanding an abundant supply of water from the River Aire, with the advantages of carriage upon the Railway on one side of the buildings, and the Leeds and Liverpool Canal on the other, stands Saltaire covering six acres of ground, with the well planned town, built by Mr. Salt adjoining. The plate which accompanies this work, will convey to the reader a comprehensive view of the works, and the surrounding scenery, yet, from the point of view chosen by the artist, the imposing aspect of the south-west front, constructed in a bold style of Italian architecture, with an elegant façade, five hundred and fifty feet in length, and seventy-two feet in

height, is unavoidably not seen. This, forming the front of the principal building, which is that appropriated to the spinning factory, includes six stories, and is intersected in the centre by the engine house, containing four gigantic steam engines, nominally of four hundred horse-power, but really of the strength of twelve hundred. The spinning factory, to ensure stability, is constructed in the most massive style; the walls in thickness rivalling the Norman keeps of old, are supported by arches standing on iron pillars, and covered by a cast iron roof, rendering the building consequently fire proof.

Running at a right angle with the spinning establishment, is the pile of building seven stories in height and three hundred and thirty yards in length, devoted to the warehouses, and fitted with most ingenious contrivances for conveying goods to and from the various parts of the building. Besides, its use in storing the raw materials, the processes of sorting the Alpaca and Mohair used in the manufactures at Saltaire are there carried on in spacious and airy rooms, well lighted with plate glass windows, and at the top of this building there is a cast iron tank, capable of containing seventy thousand gallons of water, available for the use of the town of Saltaire, or in case of fire.

On each side of the warehouse, the ground is occupied with the preparing and weaving sheds, that on the north-west angle is occupied by the preparing machines, whilst the shed on the north-east is adapted for weaving, and contains upwards of one thousand looms of various descriptions, some for weaving plain goods, and some for figured ones. A most ingenious contrivance has been introduced by Mr. Mowbray, the engineer at Saltaire, for weaving checks in power-looms, by the application of a novel and most effective revolving box. The checks and plaids, combined of silk warp and Alpaca weft, woven by this process, are at once of most beautiful appearance, and from the easiness of weaving, of comparatively cheap production.

Under the floor of this shed the main shafting moving the machinery is placed, a plan which obviates any necessity for boxing or protecting it, to prevent accidents, and as far as the writer knows, only adopted in one other establishment in



the kingdom. Owing to the shafting and gearing working from under the floor, the room comprising an area of eight thousand four hundred yards, is comparatively free from dust, and the giddy whirl of the shafting and gearing, and is certainly the most agreeable spot to work in that I have beheld in any factory.

The buildings constituting the west front, are appropriated to counting-houses, dining rooms, warp dressing rooms, and other suitable conveniences, and as an inspection of the engraving will prove, are of a graceful and ornamental character. Indeed, the whole building is an example, that ornamental and graceful structures are not at all incompatible with the utilitarian purposes of a factory, but that both may be harmoniously combined. To connect the works and town with the district on the north of the Aire, a handsome wrought iron girder bridge, four hundred and fifty feet in length, spans the river.

In closing this description of Saltaire, which has most aptly been designated a 'palace of industry,' a passing notice must be allotted to the manufacturing town there raised for the accommodation of the workpeople, which number about three thousand. The dwelling-houses are built in a neat and convenient style, with especial attention to the health and comfort of the inmates, and well supplied with good water, and also with gas from the gasometer at Saltaire works, which is capable of yielding gas for five thousand lights. Nor has the proprietor been unmindful of the improvement and recreation of the denizens of this new town, as mechanics' and other institutions to "make the workman exult midst his toil," which have sprung up within its precincts, testify. Altogether, as the mill has been justly pronounced a 'model mill,' this is a model town, and I hope that the operatives of Saltaire will, like those of Lowell, become in sobriety, industry, and good conduct, a model to the whole of the manufacturing population of the world.

## CHAPTER XII.

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Introduction of Cotton Warps.—Important effect on the Worsted Trade.—Mr. Barratt's Account of the first Manufacture of Orleans Cloth.—Difficulties to be surmounted in dyeing this mixed Fabric.—Commencement of the Manufacture of Orleans Cloth in Bradford District.—Mr. Milligan's Statement —Mousselines de Laine brought out.—Condition of the Hand-Loom Weavers.—Report of Mr. Chapman.—Number of Worsted Mills in England in 1838.—Increase of the Weight of the English Fleece.—Amount of Return of Drawback on Soap allowed to the West-Riding Worsted Manufacturers in the year 1840.—Value of their Productions.—Growth of the Export of English Yarn.—Drawback on Soap allowed to the West-Riding Worsted Manufacturers in 1845.—State of Trade.—Quantity of Stuffs exported to each Country.—Number of Worsted Factories in the United Kingdom, and the Amount of Horse Power and Hands employed therein in 1850.—Drawback on Soap used in the West-Riding Worsted Trade in 1850-1.—Extent of the Manufacture.—Great Exhibition in London.—Exposition of Worsted Fabrics.—Report of Juries.—Paris Exhibition.—English Worsted exhibited there.—Superiority of our mixed Fabrics.—Report of Juries.—Report of Deputation to the Paris Exhibition from Bradford Chamber of Commerce.—History of the Manufacture brought down to the year 1856.—Review, Present State, and Prospects of the Manufacture.

MANY have been the important eras noticed in this work as affecting the worsted manufacture, and it is singular that the most important have been those where lighter and more tasteful fabrics superseded the heavy and less elegant ones of previous times. For instance the change effected in the fabrication of worsteds during the reign of Edward III., consisted no doubt of a more beautiful though less substantial texture, and this was especially the case when the Flemings in the reign of Elizabeth, brought over new arts of making worsted goods. Several of these, it will be remembered, were mixed goods formed of linen or silk warp and worsted weft. But of all the eras which have marked the history of this manufacture none exceeds in importance that of the introduction of cotton warps in the weaving of worsted stuffs.

The impulse and extension given by this means to the trade of the West-Riding is incalculable. It has imparted a new character to the worsted industry, enabled the manufacturer to suit the requirements of the age by producing light and elegant stuff goods, rivalling in cheapness articles from cotton, and in brilliancy and delicacy those from silk. Henceforward the trade assumes a new and broader aspect, and exhibits a power of adaptation for all classes of goods, and a capability of expansion which, a few years previous to this period, could not be conceived.

Several circumstances conspired to hasten such a result. Among these, the most conspicuous sprung from the prevailing taste, which became year by year more evident for light, elegant, and cheap articles of dress, which lacking the wearing qualities of former stuffs were yet more showy and attractive. No longer in purchasing the material for a dress was durability the prime quality sought. No longer the wedding gown was expected to last the greater portion of life, to be used with care, and not cast aside when its newness, or fair appearance had faded. Luxury in dress, as well as living, had begun to prevail among all classes, even the lowest, and few cared to purchase an article like the older and expensive worsted, which lost its beauty long before it was worn out. Had not mixed and light fabrics of worsted stuffs been introduced, the worsted manufacture would in the present rivalry in dress, unquestionably have dwindled instead of assuming its present gigantic proportions. So much were showy and delicate garments prized, that for many years it had been the chief object of the manufacturer to produce articles such as merinoes, Saxony cloths, and other textures suitable for the purpose. The hint for combining cotton warps and worsted weft in making worsted stuffs, was probably taken from the Huddersfield fabrics where the method had for a long period prevailed, in producing the fancy goods of that district. Long before the period now under consideration (the year 1837) orleans cloth had been produced in small quantities, and I have been fortunate in obtaining full particulars from the inventor of the



circumstances under which this cloth was first made, as detailed in the following letter which has been obtained on the subject:—

Manchester, 12th March, 1856.

DEAR SIR,

I was, as you are aware, the inventor of summer cloth, afterwards called orleans cloth. In the spring of 1825 I went to America, and while there was asked by a number of merchants, whether something could not be invented for summer coats, for that there was nothing that had been produced that was fit for gentlemen to wear: that a cotton article had been used, a silk one, and a worsted lasting, but that none of them were liked; and one house in Philadelphia was so anxious to get something suitable, that they gave me a conditional order to invent, if possible, something that would answer the purpose. In the autumn of the same year I returned to England, and during the voyage I considered how the article ought to be made; and concluded that it must have a fine cotton warp, and fine worsted weft, and be made in such a manner that the worsted should cover, or nearly cover, the cotton warp. Soon after my arrival at home, I called on a worsted manufacturer in Manchester, and mentioned the order I had received, and how I intended to manufacture it; but he said “you had better not try, for I made a similar article some time since, and when the goods got dyed they were spoiled, and I lost fifty per cent. by them;” but he added “you can go to the person that dyed the goods I made, and hear what he says.” I then went to the worsted dyer, and asked his advice; he replied, “such an article as worsted and cotton cannot possibly be dyed without being spoiled, because the ingredients that are required to dye the worsted will take the colour out of the cotton.” Not altogether discouraged by hearing this, I commenced making experiments to find what colours could be made so fast as to stand the worsted dye, and I found that a perfectly fast indigo blue warp might be woven with worsted, and would stand to be dyed black, blue, or dark green; and afterwards, I found that a purple and a drab warp could be made so fast as to stand being dyed brown and drab. We therefore, commenced making the small experimental order, but I soon found that to make the cloth perfect was much more difficult than I expected, though the principle I acted upon was perfectly right. This first order was made, and sent off, and another came back for four times the quantity; this second order was executed much better than the first. However, as we did not know much of the house, we sent the goods to our agents in Philadelphia, with instructions to be paid for them on delivery, and this was accordingly done; and sometime after the house failed. Two of their largest creditors found our summer cloths in the store, saw that the article was the thing wanted, and immediately came over to England and gave us orders for as many goods of the kind as we could make for the next spring trade, with a promise that we would not sell, or even show, the article to any other houses; and in this way we continued to manufacture for these two houses for several seasons. But during the time that we made for the two houses exclusively, the American buyers often brought us samples of our summer cloth, and were very urgent to give us orders, and when we said we were engaged, some of them were angry, and in one or more instances said that they did not approve of monopoly,

and would get the goods elsewhere. And ultimately some Manchester and Yorkshire manufacturers succeeded in making an article somewhat similar to ours, though not near so good; and we were told by one of our large American customers that a great deal of defective summer cloth was sent to the States, and that the article would have gone out, if our goods had not continued to keep up its credit. I must say that we owed a part of our success in bringing the article to its ultimate state of perfection by using a most excellent quality of worsted yarns from your house; and also from the beautiful cotton lace thread for warps which we got spun in Manchester. We were also fortunate in having excellent workpeople: a number of our linen and cotton weavers we had to instruct at the first, and afterwards they instructed others. The effect that the manufacture of this cloth had upon the neighbouring district may be judged from the fact that in our township the poor rates were reduced £300 in the year by our employing so many hand weavers, many of whom were previously out of work. The Yorkshire manufacturers have certainly succeeded admirably in making a light article, on the same principle as our summer cloth, for women's dresses; and also in the alpaca cloth, both of which are now made in immense quantities. The alpaca cloth we often attempted, but we could never get it dyed level in colour, for which you sent us small parcels of yarn frequently. Soon after this difficulty was overcome, we declined ours as you are aware. The first fabric we made in summer cloth was plain cloth, one thread of warp in each dent of the reed, which had the appearance of a very fine pile (marked No. 1, in the patterns inclosed). The second was a three shafted twill (marked No. 2.) The third a diagonal pile, which we called Astrakan cloth (No. 3.) And the fourth a crape cloth (No. 4.) All these we made in large quantities.

Yours respectfully,

CHAS. WALKER, ESQ.

JOSEPH BARRATT.

A more satisfactory account has seldom been given of the first bringing into use of any article. But though Mr. Barratt produced orleans cloth, since so important an article in the West-Riding staple manufactures, and conducing so much to the prosperity of the district, at so early a period as perhaps the year 1826, yet until ten years afterwards the mixed fabrics of cotton and worsted, had not obtained any considerable growth; but the interval had been employed in endeavouring to perfect the process. Among those who early devoted their energies with success to the production of cotton and worsted goods, stand foremost in Yorkshire, Messrs. Wood of Denbydale, near Huddersfield, and so early and successful were their efforts, that in the West-Riding it is a common belief that they were the inventors.

It was not until the year 1837 that the use of cotton warps had attained to much use in the worsted trade, and then



they began to be more employed in the manufactures of the Bradford district. And to the dyers of Bradford much must be attributed in overcoming the difficulties arising in the dyeing and finishing of these cotton and worsted goods. Mr. Forbes, in his Lecture thus forcibly describes the difficulties overcome. "The processes for the dyeing of cotton alone had of course been long known; although the colours produced in cotton had never generally speaking been so bright and effective, as on fabrics made entirely from wool. The combination of wool and cotton in the same piece rendered necessary more varied and intricate operations. At first the cotton warps were all dyed previously to being woven, it being considered that the nature of the two substances, cotton and wool, one vegetable and the other animal, was so dissimilar that to dye them together was impracticable. Various attempts and experiments were nevertheless made; first the dyeing of blacks, then of dark colours, and ultimately of lighter shades, was accomplished, and the result has been that goods made of white cotton warp and worsted weft can be dyed quite as perfect in colour as French merinoes composed of wool alone." It has been reported that to the process of steaming their dyed cotton warps on rollers much of the success of Messrs. Wood of Denbydale, was owing, for thus the colour was set and not liable to be altered in subsequent processes.

Coming into extensive use at a most opportune time, just when the trade exhibited signs of depression, these mixed stuffs imparted much activity and enterprize to the business. A spirit of emulation sprung up among the manufacturers, and the merchants bought freely of the new productions. At first great difficulty arose in procuring cotton warps of good or indeed of any quality, because the cotton spinners could not be induced to turn their attention to a branch of trade at once novel, and requiring peculiar machinery and care, and which gave no promise of becoming so large and important as time has revealed.

A narrative has been furnished to me by Mr. Robert Miligan, an intelligent manufacturer, describing the introduction



of these mixed goods of cotton and worsted, and giving some interesting particulars respecting the goods previously made.

Twenty years since we were manufacturers of goods made entirely of worsted, our fabrics being known as 'merinoes' made exclusively of sheep's wool, and at prices ranging from fifty shillings to ninety shillings for a piece twenty-eight yards long, and forty-eight inches wide in the grey state; 'plainbacks,' or cloth twilled on one side only, also all wool, at prices ranging from fifty shillings to ninety shillings for twenty-eight yards long, forty-eight inches wide, and figured merinoes woven in Jacquard looms at prices ranging from ninety-five shillings to one hundred and fifty shillings for the same length and width. All these goods were denominated six-quarters wide. These figured merinoes were in excellent demand for a period of about three years, and, although the weaver was enabled to earn a very high rate of wages, the goods were very profitable to the manufacturer. The style and designs of these goods, then so much approved, would now be considered vulgar and unsaleable.

At this time I find from our books we paid four shillings and four shillings and threepence per pound for 32s worsted warp, and seventeen shillings and sixpence per gross for 36s weft, four shillings and sixpence per pound for 36s warp, and fifteen shillings per gross for 44s weft.

We continued to make exclusively this class of goods, until the close of 1837, when our attention was directed to cotton, as a substitute for worsted warps. Our senior partner experienced considerable difficulty in obtaining the first cotton warp we made use of, and the parties who eventually supplied the article did so with the greatest amount of indifference, and apparent unwillingness to be troubled with the business. We claim to be among the earliest manufacturers who successfully used cotton warps in Bradford goods for women's wear. Our first goods were cotton warp double twills, but there was much difficulty in dyeing these satisfactorily, and it was not until September, 1838, that we made a fair start with cotton warps in goods designated by the name of 'orleans cloth.'

At this time we used 50s cotton at two shillings and threepence and two shillings and sevenpence per pound, and 60s cotton at two shillings and eightpence per pound, our warps being dyed black both in Manchester and Huddersfield, at a cost of fourpence and fivepence per pound. The introduction of cotton warps into the Bradford goods may be considered as having formed the foundation of the fancy trade of this district. These goods soon attracted considerable attention, nevertheless the difficulty of procuring warps in a suitable form, and getting them properly dyed and dressed retarded our progress with these goods, and comparatively little was done in them before the summer of 1839, at which period they gave a great impulse to our manufacturers, and caused a rapid extension of our business. In November, 1838, we obtained readily for our cotton warps, double twills, forty-four inches wide, twenty-eight yards long, seventy shillings per piece. At this period also, we executed an order for the eminent house of Rennie, Tetley, & Co., for worsted double twills, at £9 15s. per piece, twenty-eight yards long, forty-four inches wide. On the 1st of January, 1839, we delivered our six-quarters orleans, to Messrs. Milligan, Forbes, & Co., at seventy-two shillings per piece of twenty-eight yards, and three-quarters orleans at forty shillings per piece of twenty-eight yards.

These prices, with some slight variations for quality, &c., were maintained for some time, and during this month the finest warp we used was 70s cotton twist made for us by Messrs. John Andrew & Co., of Manchester, at three shillings per pound, and by Messrs. Sunderland & Wrigge, at three shillings and fivepence, the dyeing of this very fine cotton was charged sevenpence per pound for common black. As a proof of the attention excited by our orleans cloth, it was a usual thing to find two or three merchants awaiting the opening of our room doors at Bradford on market day and Mondays, and on one occasion a very amusing scene or rather struggle occurred between two merchants in the steps leading up to our rooms, one a well known quaker buyer, the other a younger merchant, each determined to be first in.

These days are gone by for ever. Our orleans continued in good demand in both three-quarters and six-quarters width, during the entire year; but before its close, we had several competitors.

From this time our manufacture of all wool goods declined for a few years, we did but little in them, and we entirely ceased to cultivate that trade in the year 1845.

In the month of Septémber, 1839, we paid for 70s cotton, three shillings and sixpence per pound; for 80s four shillings and tenpence per pound; these yarns or such as answer our purpose equally as well may now be bought at the respective rates of one shilling and sixpence and one shilling and eightpence per pound.

Springing out of the introduction of mixed stuffs, formed of cotton warp and worsted weft, arose the manufacture of Mousselines de Laine, which soon after being brought into the market came into extensive use. Unlike the French fabric of the same name, which is wholly composed of wool, the English one consisted of cotton warp combined with worsted weft. At first it was believed that these goods could only be woven in hand looms, and from the great number of skilled weavers in Colne, it became the centre of this extensive and rapidly increasing manufacture. These weavers of the Colne district were eminently fitted to weave these light fabrics, because they had always been accounted the most dexterous weavers of cotton, even as compared with the best to be found in Lancashire. Thus Colne became, after the lapse of the many years which had passed away since the heyday of Colne serges, again one of the seats of worsted manufacture, and continues to be so even to the present day, although Mousselines have long been mainly produced from power looms. These kind of stuffs being particularly adapted for printing colours upon, have added much to the ornamental character of worsteds.



A few notes must now be added, descriptive of the state of the stuff market, in the years commencing from 1836.

It has been previously recorded that the market was dull in September, 1836. This was the natural reaction of the outrageous speculation which characterized that year, and rendered it a counterpart of the memorable year 1825, in the general excitement and extravagance which pervaded all branches of trade. The following year proved to be one of extraordinary depression. With the exception probably of the year 1825-6, that of 1837 may be accounted the most unfortunate in the modern annals of worsted industry. From the beginning of the year symptoms prevailed of the panic, which afterwards spread over the country, and affected every branch of trade and commerce. Doubts had early been entertained of "the adequateness of the resources of the principal houses in the American trade, vast as those resources were known to be, to meet the enormous, the extravagant extent of their engagements." In February, a crisis in the money market arrived which rendered the difficulties of those houses notorious. During the month of April, the stuff markets were very much depressed; many manufacturers failed in May, but the grand convulsion was witnessed at the commencement of June, when several of these great American houses went down with a crash, and involved in ruin a multitude of manufacturers, especially those of Bradford. Throughout the whole of June and July the panic was at its height. Very great loss was also experienced in the fall of stocks for so greatly had the spirit of speculation and overtrading spread among the spinners and manufacturers, that most of those who possessed the means were overstocked with the raw material. The darkest clouds had, however, passed away early in August, when more confidence between seller and buyer began to be displayed; but the Summer trade to the United States of America in stuffs was lost, so that the exports to that quarter fell to one hundred and twenty-seven thousand, three hundred and eighty-one pieces, not much more than one-fourth of the quantity shipped thither the previous year. Trade began to revive rapidly in September, when fine merinoes were readily sold and the year ended much better than it began.



Brighter prospects ushered in the year 1838, and the amount of business transacted in the stuff markets was very considerable, but the price of wool having much advanced since the rates quoted in December, very materially tended to retard the progress of trade. The American market had attained a more satisfactory state, though the orders were much less than in former years. In March and April a stagnation prevailed in the market and many spinners and manufacturers commenced running short time, and some low qualities of merinoes could even be purchased at nearly the same price as in December last. This state of trade affected the rate of wages which had, for some time in spinning and weaving, been gradually declining.\* Alpaca figures now to some extent made, seem to have been the only articles in request. In May a much better demand for both yarn and pieces sprung up, and especially six-quarter plainbacks and low six-quarter merinoes were readily sold, at some advance in price. This state of the market continued through June, when moreens and four-quarter plainbacks were also much sought after, and it is reported, "the Alpaca figure has

\* Weekly wages of the operatives employed in the spinning establishment of Messrs. Hindes and Derham, 1838:—

	£	s.	d.		£	s.	d.
Woolsorters .. .. .	1	6	3½	to	1	10	0
Ditto, overlooker .. .. .				„	1	10	0
Combers, by hand .. .. .	0	14	0	„	1	6	6
Ditto, overlookers 28s. with a house } worth £5. .. .. . }				„	1	13	0
Ditto, by machine (boys) .. .. .	0	4	0	„	0	10	0
„ overlooker .. .. .				„	1	4	0
Washers, (paid by the week not by the job.)				„	0	18	0
Preparers at the drawing frames, (girls)	0	6	6	„	0	7	0
Spinners, (girls under thirteen years) ..	0	1	6	„	0	2	0
Ditto, do. over do. .. .. .	0	3	0	„	0	6	0
Overlookers, both departments .. .. .	0	18	0	„	1	1	0
Reelers, (girls and women) .. .. .	0	8	5	„	0	13	9
Bunchers, who make up the hanks into } packets, (girls and women) .. .. . }	0	7	6	„	0	8	0
Men who are overlookers .. .. .	0	18	0	„	1	4	0
Packers, (men) .. .. .				„	0	18	0
Engineman .. .. .				„	1	4	0
Fireman .. .. .				„	0	16	0

become a decided trade. It is produced for the home and foreign trade, especially the latter." Quantities of this figured stuff began to be shipped to Germany and also a portion to America. In the early part of August the stocks of goods were large but a brisk trade ensued which lasted during September, but afterwards declined to the end of the year. In a word, this year was one of a steady average trade so far as consumption is considered, but prices were much lower, and consequently affected wages. This is exemplified by the fact that while the general exports of British and Irish produce and manufactures amounted in quantity to 28 per cent. over those of the previous year, their value had only increased in the ratio of 19 per cent. The increase of the export of stuffs this year as compared with the last, reached to upwards of three hundred thousand pieces.

From the time of power-loom being first applied to the weaving of worsteds, the condition of the hand-loom weaver had gradually been getting worse. Of all the operatives connected with the trade he, on the whole, was the most uncomplaining and praiseworthy in his conduct. But his earnings had been so reduced by the encroachments of the power-loom that in the year 1838, the hand-loom weaver could with difficulty support himself and household. For some years his situation had attracted the attention of Parliament, and in 1834, a Select Committee sat to inquire into the grievances alleged in the petitions of the hand-loom weavers, and eventually a Commission was appointed to take evidence and report on the condition of these weavers. The report of Mr. Chapman, the Assistant Commissioner, who sat at Bradford, is highly interesting, and discloses many important particulars. Mr. John Milner, delivered in a statement to the Commissioner relative to the wages of hand-loom weavers which is printed below:—

In order the more clearly to convey my ideas in showing the rise and fall of weaving wages according to the view I take of it, I shall compare worsted stuff weaving to a main line or high road which extends itself over a hill. It is now about thirty-nine years since I began to be a weaver. At that time ribbed calimancoes were the main line; they were made of hand-spun yarn, and we had five shillings for weaving about sixty-four hanks in a piece. I had one piece a week set for my

work. My father, who was one of the swiftest weavers in the township of Clayton, used sometimes to weave two pieces a week, which was earning ten shillings a week ; but this he could not do regularly. Soon after this time cotton weaving was introduced into this part of the country and weavers' wages began to advance. At this time (1799 or 1800) a new era commenced in the stuff trade. Mill yarn, or yarn spun by machinery was introduced, and many improvements took place in weaving, such as the fly shuttle. So great was the improvement at that day, that instead of being able to weave only one five shilling piece a week, in three or four years I could, and did frequently, weave three and four pieces in a week, at four shillings and threepence each, and that for no other person than the present Mr. Richard Fawcett. I recollect many a time weaving a piece in one day. In 1814, I began to weave for Mr. James Akroyd, of Old Lane, Halifax. A three-quarter (twenty-five inches) plainback, fifty set, eighty-four hanks, was then eleven shillings and sixpence a piece. About 1815, wages were lowered one shilling a piece. During the Summer of that year, when the wage was ten shillings and sixpence I could, and sometimes did weave three pieces a week. These goods were then the high road or main line, and the eleven shillings and sixpence as the summit of the hill. Since that time it is my opinion wages have declined. I do not mean to say that good wages have not been given for weaving since that time for many new things, or fresh kinds of goods have been introduced, which I call branches out of this main line. In the above year, or the beginning of 1816, I began weaving spotted plainbacks for Mr. Akroyd, and did frequently weave one piece in two days, for which I had fourteen shillings and sixpence ; but these were of very short duration. We have had other branches, such as dobbies, damasks, lastings, &c., for which very good wages were given at first ; but these, in a few months or years, verged back again into the main line, and the weaver, generally, if not always, found himself at a lower point than the one from which he branched out. In 1819, I engaged with Mr. Akroyd to take in his goods from his weavers. From 1815 to that time several reductions had taken place. In 1821 or 1822, we had several branches out of the main line : lastings were one of those branches, for which I paid twenty-four shillings for a six in the reed till 1824, (about two years), when we pulled off two shillings, and continued to pull off one shilling a time till I paid the very same weavers for the same quality of goods, eleven shillings. This was about 1828, when we gave over making by hand. Those masters who have continued to make them, are now paying from eight shillings to nine shillings. But here I would observe, they are readier to work by at least three shillings a piece. Damasks were another branch for which I paid at first thirty-six shillings, now they are fifteen shillings for the same quality. In 1835, we had another branch of figured goods, for which we paid two shillings a score. For fifty sets, sixteen score hanks, we gave thirty two shillings ; now they are one shilling a score. In 1835, for those goods in the old line, we paid for fifty sets, fifteen score hanks, fifteen shillings and sixpence ; being little better than one shilling a score : so that the figured goods have come down in wages to where the old line then was, and yet the old line has sunk to ninepence a score. So that all these branches have verged, and are verging, toward the high road.

In order to make a just comparison of the wages of worsted weavers at these respective periods, regard must be given to the prices of the various articles of consumption.



For instance, in the year 1800 a week's wages would purchase only two-thirds of a bushel of wheat, and seventeen pounds of flesh, whilst in 1837 the like wages would provide a bushel and a half of wheat, and thirty-four pounds of flesh, showing that in reality the weaver of 1800 was in a much worse plight than the one in 1837; and such articles as butter, cheese, salt, candles, &c., were very much dearer at the former period than the latter. Added to this, clothing at the commencement of the century was also more expensive.

In 1815 and 1816 wheat was not quite so dear as in the beginning of the century, but afterwards the best wheat continued to be over one hundred shillings per quarter until 1819. Making every deduction, it may be assumed that the one pound fourteen and sixpence earned in 1814 would not purchase more of the necessaries and comforts of life than twenty shillings in 1838: still there remained a wide gap between the wages of the former period and those earned in the latter.

Looking over the evidence, the following particulars appear the most important respecting the Bradford district. Messrs. Willett, Oxley, & Co., manufacturers of fine shalloons stated they employed about one hundred hands, and for the finest goods containing twenty-seven score hanks in a sixty-two set, paid one pound thirteen shillings a piece; for twenty-two score hanks in a fifty-two set, one pound three shillings; for seventeen score and ten hanks in a fifty set plainback, sixteen shillings. They considered it would be an average task for a weaver to deliver a fine piece in a fortnight. A workman of theirs, Julius Ackroyd, of Manningham, forty years of age, an excellent workman, said "the finest shalloons (the sixty-two set) take me, when not assisted, a fortnight and three days; when my wife picks the knots, &c., from the piece, only fourteen days. I can weave five hanks an hour, but to pick the surface would take me half an hour." To enable the reader to estimate the labour in weaving one of these pieces, five hanks an hour is fifty a day of ten hours working, and these fifty hanks contain twenty-eight thousand yards or eighteen thousand and sixty-six picks, of one and a half yards in breadth,

being one thousand eight hundred and six picks an hour, or thirty-one a minute. Robert Leach, of Bradford, manufacturer, stated he employed about two hundred and fifty weavers on fancy goods, that is figured merinoes, and paid for weaving eleven score and fifteen hanks in a fifty set, twelve shillings and sixpence. He expected a piece a week, but to produce this it was evident the assistance of the weaver's family would be required. But from these wages many deductions had to be made before the net sum could be ascertained: thus for sizing threepence, winding tenpence, twisting or gearing twopence halfpenny, wear of loom say fourpence, light for the year round fourpence halfpenny, altogether two shillings for each six-quarter piece. The conclusion is inevitable that the average net earnings of a West-Riding worsted weaver would not be more than six or seven shillings a week.

Mr. Chapman formed a statement of the number of hand-loom employed in 1838, in the worsted weaving district of which Bradford is the market.

Bradford .. ..	20	Clayton .. ..	1633
Great & Little Horton	1768	Bingley with Mickel-	} 1600
Bowling .. ..	209	thwaite .. ..	
Manningham .. ..	209	Wilsden .. ..	440
Heaton .. ..	121	Baildon .. ..	600
Allerton .. ..	474	East & West Morton	240
North & East Bierley	} 870	Keighley & Hainworth	1800
(including Wibsey)		Haworth .. ..	1200
Hunsworth & Wike	60	Oxenhope .. ..	600
Thornton with Den-	} 2000		
holme .. ..			13844

Respecting Bingley, Morton, Keighley, Haworth, and Oxenhope he observes, "I have placed the word 'about' against the number of looms there, as being merely the estimate of well informed individuals, in all others it is actual enumeration." The number of weavers in Bradford district might, therefore, be set down at fourteen thousand.\*

\* The above is extracted from the Report of Mr. Chapman, one of the Assistant Commissioners appointed to inquire into the condition of the hand-loom weaver.

In Leeds district there were these worsted looms:—Leeds, seven hundred and twenty-five; Eccleshill, twenty; Idle, forty-two; Shipley, sixty-two; Pudsey, seventy-five. It is instructive to observe how the worsted manufacture has encroached upon that of cloth in these places since this period. For instance, Shipley then contained three hundred and sixty cloth looms, and now probably does not contain ten.

At Norwich, the wages of the hand-loom weavers were higher, owing to the work being of a finer kind. Sixty male weavers in the employment of Mr. Willett received these wages:—

NAME.	QUALITY OR RATE.	AVERAGE EARNINGS PER WEEK.	
		s.	d.
Figured Challi .. .. .	84	16	0
Plain do. .. .. .	90	14	3
Do. .. .. .	78	13	0
Bombazines .. .. .	39	12	6
Do. .. .. .	32	8	0

Messrs. Bolingbroke & Co., gave a statement of the wages of twenty weavers of fine bombazines, alapines, and paramattas, which averaged thirteen shillings and sixpence, and for low bombazines, checks, and challis, eight shillings and fivepence a week.

At this time there were four thousand and fifty-four weavers in Norwich thus distributed:—of bombazine, one thousand two hundred and five; camblets, ninety-two; cambletees, twenty; princettas, two hundred and forty-two; Jacquard, thirty; worsted shawls, twenty-six; challis, Yorkshire stuffs, Mousselines de laine, &c., one thousand two hundred and forty seven; and the remainder were weavers of bandanas, fillovers, gauzes, silk shawls, &c. There were also one thousand and twenty-one looms unemployed, making the total number of looms in the city five thousand and seventy-five. Of the four thousand and fifty-four looms above mentioned, three thousand three hundred and ninety-eight were in the houses of the



weaver, and only six hundred and fifty-six in shops and factories, showing that weaving in Norwich still remained on the whole, a domestic employment.\*

Assistant Commissioners also collected evidence as to the condition of the hand-loom weavers at Kidderminster and in Devonshire. It was shewn that there were 1,965 carpet looms in the former place, besides eighty for weaving bombazines. All these were hand-loom, of which four hundred stood unemployed. Previously the bombazine manufacture of Kidderminster has been alluded to, but in the year 1838 it had almost become extinct, as the Norwich make of this fabric, though less durable, was more "showy," and produced at less cost. The bombazine weavers worked in their own houses. There were about seventy in the town, and wages averaged only seven shillings a week; because the work, unlike carpet weaving, being comparatively light, women and aged persons could perform it. When the bombazine trade, which was once of importance in Kidderminster, decreased, the men engaged therein sought employment in other branches.

Although serges or long ells are strictly speaking not within the province of the worsted manufacture, yet being partly formed of worsted, namely, the warp, and having in these pages often been noticed, a few particulars drawn from the Assistant Commissioner's report thereon will be interesting. "Serges and long ells," he observes, "are made at Wellington in Somersetshire, and at almost every town and village in the county of Devon, giving employment to more than three thousand looms in the latter county, and nearly six hundred looms at or near the first-named place." At the beginning of this century, the East-India Company purchased very largely, namely, to the amount of two hundred and forty thousand pieces a year for their China trade, giving employment to at least four thousand six hundred persons. When the charter of the East-India Company expired in 1833, the trade in long ells gradually diminished, and the price for

\* Extracted from the Report of Dr. Mitchell on the condition of the hand-loom weavers of Norwich. The evidence of Mr. Stark given before the Commissioner is well worthy of perusal

weaving serges fell so low that women were mostly employed in the manufacture, earning from four to seven shillings a week.\*

The year 1839 opened with a moderate market for low qualities of stuffs, which for two or three seasons had been more in request. A remarkable change had occurred since the year 1836. Previously fine goods commanded the market, then followed a demand for middle qualities, and now cheap sorts had taken precedence. Before the end of March the market retrograded and business was much less active than for the previous two months. During the Summer, the demand for pieces equalled the supply, but prices were very low. For the last twelve months the mills had been worked full time and the hands well employed; but one feature was remarked, namely, that the running of the machinery long over hours, so customary in former years, had ceased. Wool maintained a high price, and thus a considerable stock had accumulated. For the last seven or eight years wool had borne a price very remunerating to the farmer, and notwithstanding of late the export of long wool especially Irish had been large, it had been compensated by the importation of Alpaca, Mohair, and other materials used in the worsted business, leaving our colonial wool almost a clear increase, and more than sufficient to meet our growing consumption. This year too the yield was large, the fleece being what is termed "full of wool." In June, July, and August the stocks of wool were extensive, as were also those of yarn, though the spinners were running their machinery short time. And on the approach of Autumn, owing to a monetary crisis of great severity, "goods were lower on the whole than in the panic of 1837, when wool was fifteen per cent. lower than at present."† Such a state of the markets rendered

\* Extracted from the Report of W. A. Mills, Esq., a Commissioner on hand-loom weaving in the West of England.

† There had been during the last two years a great drain upon the money market to pay for our foreign supplies of corn, which in the two years had amounted to £10,000,000 sterling. In August, 1839, money was so scarce that the Bank of England raised its discount to six per cent.

the position of the spinner and manufacturer exceedingly embarrassing. It was estimated that in the month of October there were no fewer than three hundred spinning frames in the Bradford district alone unemployed, owing to the insolvency of their owners. Common figures and Alpacas were unsaleable. But the export of stuffs increased considerably this year especially to America, notwithstanding the commercial crisis which, in the early portion of it, obstructed our commerce with the United States, owing to our over importation of their joint stock and other securities.

An opportunity is now afforded of presenting an approximate view of the number of worsted factories in England in 1838. In that year the Factory Inspectors prepared, in accordance with an order of the House of Commons, a return of all mills and factories in the United Kingdom, from which the ensuing table has been framed.\* It may be premised that the worsted factories comprised in Leicestershire and Nottinghamshire represent the hosiery trade, whilst those in Worcestershire were employed in that of carpets. These and the others not devoted to the worsted manufacture, in its usual acceptation, are trifling deductions from the bulk engaged therein. Nearly all the worsted factories in the West-Riding were employed in the pure worsted manufacture,† and numbered three hundred and forty-seven mills, with a total moving power equal to five thousand seven hundred and eighty-one horse power, employing twenty-six thousand five hundred and eighty-one hands, and being within about five thousand of all those employed in this branch throughout England.‡

\* This return was prepared by three Factory Inspectors, viz :—by Mr. Horner, whose district included Lancashire, Northumberland, Durham, and such part of the West-Riding as is comprised in the parishes of Skipton, Burnsall, Bowes, Gargrave, and Linton; by Mr. Howell, whose district included the counties of Chester, Salop, Worcester, and Warwick; and by Mr. Saunders, whose district included the whole of the rest of England, and especially comprised the whole of the West-Riding of Yorkshire, exclusive of the above-mentioned parishes.

† All the worsted mills of Yorkshire lay in the West-Riding, except one at Bowes, in the North-Riding employed in the hosiery branch, and turned by a water-wheel of ten-horse power, and employing twenty-two hands.

‡ The places enumerated in this Table represent the several parishes, and not merely the towns.



## WORSTED MILLS IN ENGLAND IN 1838.

	Mills.	STEAM.		WATER.		Children between 9 & 13.	Young Persons between 13 & 18.	Total Number of Hands.
		No. of Engines	No. of Horse Power.	No. of Wheels.	No. of Horse Power			
<i>Cheshire</i> —Bowden ..	1	1	20				1	1
<i>Derbyshire</i> —Ashover	1			2	36	11	26	71
<i>Leicestershire</i> —								
Leicester .....	23	21	343			48	559	1418
Loughborough ....	2	2	38			126	64	213
Market Harborough	1	2	40			24	34	103
<i>Lincolnshire</i> —								
Colsterworth .....	1	1	4			4	1	9
<i>Lancashire</i> —								
Manchester .....	2	2	66			7	99	220
Whalley .....	7	7	103	3	21	39	195	440
Garstang .....	3	1	12	2	59	32	124	264
<i>Durham</i> —Darlington	3	4	104	1	20	36	194	405
Gateshead .....	1	1	12				15	27
<i>Norfolk</i> —Norwich ..	3	3	90	1	12	38	223	385
<i>Northampton</i> —								
Burton Latimer ..	1	1	12	1	12	13	24	57
<i>Northumberland</i> —								
Nether Witton ....	1			1	3		1	4
<i>Nottinghamshire</i> —								
Nottingham .....	2	2	20				41	111
Radford .....	1		30				64	180
Sutton Bonnington..	1	1	25	1	25		49	72
<i>Salop</i> —Bridgnorth ..	1	1	22			25	32	101
<i>Stafford</i> —Lichfield..	1	1	3	1	3		6	23
Alrewas .....	1			1	30		34	93
<i>Warwick</i> —								
St. Mary, Warwick	1	1	15				32	124
Birmingham .....	1	1	6					12
<i>Worcestershire</i> —								
Kidderminster ....	6	3	106	5	55	63	218	622
Chaddesley Corbett.	2			2	20		25	50
Hartlebury .....	1			2	18		11	20
<i>Yorkshire, W. R.</i> —								
Addingham .....	2			3	41	25	71	163
Bingley .....	18	18	230	3	24	224	484	1312
Birstal .....	8	7	165			95	407	760
Bradford .....	142	87	2059	20	113	1597	4890	10896
Burnsall .....	1			1	10	9	15	37
Calverley .....	5	6	122	2	40	166	347	800
Dewsbury .....	3	3	56			14	25	190
Gargrave .....	1	1	25			5	21	51
Halifax .....	80	50	1150	23	259	1198	2386	5614
Hoyland .....	2	2	60			129	171	429
Keighley .....	38	16	217	19	207	275	1143	2125
Kildwick .....	7	3	42	6	50	25	119	231
Leeds .....	13	13	334	2	80	161	1020	2149
Linton .....	2			2	44	28	116	233
Otley .....	10	7	102	8	99	127	306	638
Skipton .....	1			1	6	9	12	26
Wakefield .....	13	12	224	1	16	98	414	916
Whitkirk .....	1	1	6				4	11
Total..	415	282	5863	114	1303	4651	14023	31606

In the small interval between the years 1833 and 1838, there had been a most rapid and remarkable increase in the steam power and hands employed in the worsted manufacture.

Undoubtedly great improvement took place in the trade of the worsted districts in the year 1840, as compared with that of the last three years, but on the whole it must be ranked among the unprosperous years, arising in the main, from the very low prices of stuffs. Owing to the pressure on the money market and Chartist disturbances, the Spring trade, except for Mousselines de laine, was an unsatisfactory one. These goods, however, with orleans cloth, now become one of the staple manufactures of Bradford, were in extensive demand, much to the detriment of manufacturers of merinoes. Orleans cloths it may be noticed were made at first in Bradford district of double cotton warps, and of superior quality of weft, but afterwards low qualities of single warp were more manufactured. Throughout the year there had been little animation in the stuff markets, but in the Autumn, trade became exceedingly dull for all descriptions of goods. It may be noticed that the export of stuffs to China increased this year, although war with that country had broken out. This demand no doubt arose from the merchants of that quarter being desirous to get these goods to the market before hostilities had far advanced, as next year the supply was small. On the whole our exports of stuffs to all parts had somewhat grown, despite the large decrease to the United States.

A fitting period has now arrived to glance at the production of English wool, and the total quantity used in the worsted manufacture so far as it can be ascertained. In the previous pages it has often been observed, that the English wool every year, from many circumstances, grew less adapted for making woollen cloth, and proportionably more so for the fabrication of worsteds. One of the chief circumstances arose from the increased length of the fibre of our wool, and probably its greater coarseness, adapting it more for the Bradford trade. That our fleeces had in most of the counties grown in weight during the last forty years seems incontestable, from the comparative statement contained in the appendix.

Now taking the quantity of wool, English and imported, worked up in every description of our manufactures, at one hundred and sixty millions of pounds weight,\* we may arrive at a tolerable approximation of the proportion of this quantity of wool used in the worsted districts of the West-Riding. Recourse for this purpose must be had to the account of drawback on soap allowed to the worsted manufacturers in the year 1840, which gives the following amounts. But in comparing these with the previous ones, the reader must be informed, that owing to the duty having been reduced to one-half, since the year 1833, the amounts in after years must be *doubled* to make them standards of comparison with the drawback statements printed in former pages.†

			£	s.	d.
Bingley District	..	..	528	14	2
Burnley and Colne District	..	..	601	6	5
Bradford	do.	..	4000	2	7
Halifax	do.	..	3449	15	1
Huddersfield	do.	..	508	1	9
Dewsbury	do.	..	544	12	5
Leeds	do.	..	691	1	5
Otley	do.	..	480	18	3
Keighley	do.	..	1405	1	6
Skipton and Addingham District	..	..	114	19	6
Wakefield	do.	..	993	6	11
			<hr/>		
			£13,318	0	0
			<hr/>		

\* The total quantity of foreign wool (distinguished from that of our own possessions) retained for home consumption, amounted, in the year 1840, to thirty-six million eight hundred and sixty-two thousand one hundred and thirty-four pounds, and that of British possessions to twelve million eight hundred and forty-eight thousand two hundred and sixty-two pounds. Then, if we assume with Mr. McCulloch, that the yearly produce of our sheep reached one hundred and twenty-four million eight hundred thousand of pounds weight, of which we exported four million eight hundred and ten thousand three hundred and eighty-seven pounds, there remains as the quantity of wool, of home and foreign produce, for our manufactures between one hundred and sixty and one hundred and seventy millions of pounds weight.

† The reader's attention is particularly required to this direction, because with it the drawback accounts for this century, given from time to time in these pages, become a very fair standard of comparison relative to the amount of wool used in the West-Riding worsted manufacture.



On examining this statement with the one presented at page 430, it will be observed that the consumption of wool in the Bradford district had not in the last ten years much increased, for here it is shown on being doubled as £8,000, there (p. 430,) by about £7,000. Pursuing the same method it is seen that Halifax district had very much increased its consumption, and so had Leeds and Wakefield. The total amount of drawback represents fifty millions of pounds weight of wool washed by the West-Riding worsted manufacturers for the purposes of their trade, which may be set down as nearly one-third of the whole quantity of wool consumed in the kingdom, and the value of its manufacture at £10,000,000 sterling.

The year 1841 commenced with an animated trade in Mousselines de laine; and gambroons were also in much demand, to the great injury of the lasting makers. In March the United States Bank failed, and occasioned a panic in the worsted markets, so far as the American merchants were concerned. During May and June these markets were exceedingly dull and many failures took place. The stoppage of machinery became general, and the remainder in most cases only ran short time. This scarcity of production tended to keep up the prices, and mitigate the evil consequences of this unprosperous season. But in the Autumn business rapidly improved; figured goods and orleans were in large demand, and the looms were again well employed; but some failures in the latter part of the year created much distrust and impeded the operations of business. This year may be noted as among those of unsatisfactory trade in worsteds. The home consumption was much restricted on account of the high price of provisions, and had not the export demand been extensive, especially in the Autumn to the United States, and throughout the year to Germany, the consequences would have been disastrous.

The succeeding year began with a more animated trade, but when April approached the demand for wool had become very limited, and prices were dull. As there had been no accumulations of stocks of yarn, the trade in them continued steady. The sales in May chiefly consisted of orleans and merinoes which were disposed of largely, and this demand

continued during June, when there was also a quick market for fancy goods. The stocks in all descriptions of goods were light, especially in plain goods which were in steady request. During July there was a fair sale of all kinds of stuffs both plain and fancy ones; and in August, merchants purchased extensively, whilst the supply of orleans cloths and Parisian cloths, which were much sought after, had become exceedingly limited. A lower description of Parisian cloths chiefly produced by the "Dobby" sold well, likewise orleans cloths, particularly low qualities. Merinoes, formerly the favourite staple of worsted goods, visibly declined in public favour. In the month of August, it is recorded that "de laine makers were very busy." On the commencement of Autumn a brisk trade sprung up for heavy goods, such as lastings, moreens, damasks, and low orleans; the latter especially were much wanted and scarce, but the fancy trade was extremely dull, and merinoes were almost unsaleable. At the close of the year, it may be noticed, that the demand was principally in plain fabrics, which were not held in the average quantities of former years. In the Autumn what were termed the plug drawing riots prevailed, which, with the Chartist disturbances, much obstructed the course of trade. The number of stuffs shipped this year to America was like that of 1840 very small, compared with that of other years; but our German trade compensated for this deficiency, for on reference to the succeeding table it will be observed that the shipments to that quarter, and to Holland and Belgium, much exceeded that of the previous years. The export of stuffs to China had also sensibly fallen during this year, as well as that to our North-American Colonies.

Among the most prominent features of the worsted trade, may now be mentioned the very large export of worsted yarn, which had, from the year 1824, been of importance and progressively increasing. The value of its export in the year 1825, when, owing to the restrictions removed in the preceding year, it may be stated to have commenced as a considerable trade, only amounted to £14,000 sterling, now it had reached the extraordinary point of £637,000 sterling a year. The

under printed table exhibits the growth of this branch of foreign trade :— \*

YEAR.	QUANTITY.	VALUE.	YEAR.	QUANTITY.	VALUE.
	lbs.	£		lbs.	£
1820	3,924	810	1832	2,204,464	235,307
1821	9,121	1,917	1833	2,107,478	246,204
1822	12,515	2,392	1834	1,861,814	238,544
1823	6,423	1,127	1835	2,357,336	309,091
1824	12,640	2,188	1836	2,546,177	358,690
1825	76,961	14,467	1837	2,513,718	333,098
1826	131,032	22,794	1838	3,085,892	384,555
1827	255,708	37,932	1839	3,320,441	423,320
1828	436,722	56,243	1840	3,796,644	452,957
1829	589,558	73,648	1841	4,903,291	552,148
1830	1,108,023	122,430	1842		637,305
1831	1,592,455	158,211			

Undoubtedly this large export of our yarn would to some extent have been a national loss, could we have woven it and found a market for the manufactured goods abroad. But as the matter stood, it operated to our advantage, because the continental nations who could obtain our yarn of a better quality and cheaper than their own, had therefore no strong inducement to spin for themselves. Thus from the excellence of our spinning machinery, which almost every year was marked with improvement, we were enabled to reap a portion of the profits arising from the foreign worsted manufacture. Our export of stuffs was also rapidly growing as the following table will prove. †

Upon our foreign trade in stuffs, these remarks occur :—that the stuff trade to the Baltic, Germany, and indeed to all parts of the Continent had rapidly increased during the last few years. The greatest falling off is perceived in the export to the East-Indies and to China. But the most important growth had occurred in America, although the export of cotton and other textile fabrics had, since the year 1835, greatly dwindled.

\* In the Returns of the Board of Trade this yarn is classed as “woollen and worsted yarn,” but the woollen yarn exported was comparatively insignificant.

† Porter's Tables, Part 1, page 71, *et seq* :



## EXPORT OF WOOLLEN AND WORSTED STUFFS.

	1838	1839	1840	1841	1842
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.
Russia .. ..	35,063	45,929	55,808	52,212	62,050
Sweden .. ..	7,731	8,009	9,493	14,905	13,943
Norway .. ..	2,395	2,867	2,734	2,650	5,051
Denmark .. ..	264	502	161	318	285
Prussia .. ..	3	36	67	164	248
Germany .. ..	346,084	382,377	425,878	512,493	620,044
Holland .. ..	96,778	121,791	115,548	156,747	189,851
Belgium .. ..	70,081	58,289	60,790	56,272	84,864
France .. ..	22,152	22,362	23,025	18,299	31,962
Portugal, A- zores, & Ma- deira .. ..	27,579	40,291	37,736	44,623	37,138
Spain & the Canaries .. ..	18,260	9,379	34,679	25,309	17,086
Gibraltar .. ..	11,102	19,867	29,249	38,942	46,216
Italy .. ..	114,578	100,192	125,954	112,739	108,741
Malta .. ..	2,270	2,568	1,966	3,173	6,227
Ionian Islands	1,021	500	495	522	281
Turkey & the Levant .. ..	10,332	10,349	12,764	10,650	17,598
Morea, and Greek Isles. }	63	1	128	286	663
Guernsey, Jer- sey, Alder- ney, & Man }	3,311	3,826	4,585	4,256	5,362
East Indies & China .. ..	138,667	133,673	187,098	126,016	99,167
New Holland	10,028	13,593	12,763	10,940	12,573
Cape of Good Hope .. ..	11,334	5,027	7,921	12,400	9,415
Other parts of Africa .. ..	5,719	3,767	3,686	6,198	6,043
British North American Colonies .. ..	34,191	74,572	93,336	106,510	91,432
British W. Indies .. ..	12,703	14,246	25,499	14,381	24,992
U. S. of Ame- rica .. ..	315,542	497,608	272,865	498,246	285,053
Foreign W. Indies .. ..	9,115	14,503	17,688	12,184	13,931
Brazil .. ..	29,756	39,985	74,091	79,789	64,767
Mexico & the States of S. }	22,689	38,919	82,610	86,142	124,509
America .. ..					
Totals ..	1,358,984	1,665,596	1,718,617	2,007,366	1,979,492

Since the year 1834 the exports of worsteds had, with one or two exceptions, been yearly extending itself in all directions, and apparently to the injury of all other fabrics: for instance, the export of cloth and stuffs have stood relatively to each other as follows since the year 1816:—\*

	1816	1826	1840	1842
Cloth pieces	636,368	384,508	215,746	161,675
Stuff ditto ..	593,308	1,138,588	1,718,617	1,979,492

For the first two or three months of the succeeding year, 1843, plain goods were sought after. But the trade on the whole exhibited an unsatisfactory appearance and much machinery stood unemployed. In the middle of March, the business transacted was much below the average of what had been usual at this period of the year; but in April a steady improvement became visible. During May all the spinning frames were employed; most of the spinners were working to order, and those holding stocks cleared them at fair prices. There was likewise a full average business in all descriptions of goods. Merinoes and orleans cloths were scarce, and being much wanted, the makers were employed to order at an advanced price. Throughout the Summer, orleans cloths, full twills, and paramatta cloths, were in great request, as were also figured goods, and the prices for all these were firm. This prosperous state continued during the Autumn, the mills were running full time, the hands well employed at good wages, and the demand for articles suitable for the season extensive. Throughout the last quarter of the year, stocks of pieces were low and the sale steady, but the remuneration to the maker unsatisfactory, owing to the high price of yarn. Merchants purchased freely, being induced thereto partly by the low rate of prices.

\* This comparative statement is taken from McCulloch's Commercial Dictionary. The quantities of stuffs exported in the two first years do not agree exactly with the amounts given in preceding pages of this work, but it has not been thought worth while to make any alteration.

Subjoined is a list of worsted fabrics and their prices in the Autumn of this year, which exhibits the kind of stuffs principally made at that period, and the range of prices from the lowest to the highest qualities.\*

WIDTH. INCHES.	WORSTED GOODS.	PRICES.
25 to 27	3/4 Princettas, black, 28 yards, per piece	33 to 65/
48..50	6/4 Ditto                   "                   "	60/..140/
25..27	3/4 Lastings                   "                   "	29/..80/
46..48	6/4 Ditto                   "                   "	56/..160/
25..26	3/4 Grosgrains                   "                   "	42/..60/
46..48	6/4 Ditto                   "                   "	76/..130/
25..26	3/4 Camblets                   "                   "	28/..42/
46..48	6/4 Ditto                   "                   "	55/..88/
24..25	3/4 Figured Linings                   "                   "	15/..18/
38..42	6/4 Ditto                   "                   "	22/..30/
25..27	3/4 Summer Cloths, yarn dyed, per yard	1/..3/6
37..42	6/4 Plain Orleans, black, 28 yds., per piece	24/..66/
38..42	6/4 Twilled ditto                   "                   "	33/..80/
16..17	5/8 Wildbores or Bombazets                   "                   "	11/..18/
28..32	4/4 Ditto                   "                   "	22/..36/
36..38	5/4 Ditto                   "                   "	30/..45/
40..45	6/4 Ditto                   "                   "	36/..60/
30..34	4/4 Shalloons                   "                   "	18/..56/
36..38	5/4 Ditto                   "                   "	23/..70/
42..45	6/4 Ditto                   "                   "	30/..86/
25..27	3/4 Fancy Lastings and Gambaroons, black                   "                   "	15/..50/
36..42	6/4 Figured Merinos                   "                   "	30/..50/
36..42	6/4                   "                   Alpacas                   "                   "	36/..54/
36..44	6/4 Plain Merinos                   "                   "	25/..80/
24..27	3/4 Cotton and Worsted Damask, common colours                   "                   "	24/..40/
24..27	3/4 All Worsted Damask, black                   "                   "	28/..54/
	42/42 Says, black                   "                   "	36/..100/
	42/42 Plainback Says, black                   "                   "	38/..90/
30	Camblets, yarn dyed, 40 yds., blk.                   "                   "	46/..64/6
	Other widths and lengths in proportion.	
30	Camblets, yarn dyed, 56 yds., blk.                   "                   "	63/..90/
23	Tartans, 28 yds. common colours,                   "                   "	22/..26/
	Scarlet and Gentian 2/0 more.	

\* Extracted from the Monthly Circular of Messrs. Du Fay & Co., which is considered of authority in the trade.



Proceeding to the year 1844, the prospects were very encouraging, and stocks being low, manufacturers at the opening of the year firmly required an advance of price to meet the rise in wool and yarn, which for the last three months had been gradually improving in value, so that the makers of stuffs formed solely of wool, such as merinoes, plainbacks, lastings, and damasks, had principally suffered. In March large orders arrived from America, which gave the markets an upward tendency, and before the middle of April there was a much better business than at the corresponding period last year. The high price of the raw material however crippled, in some degree, the operations in our piece markets. In September the demand for goods slackened and the stocks increased, so that the only remedy which remained was to curtail the production, and by the middle of October no fewer than fifteen hundred looms were unemployed in the Bradford district. Depression also prevailed in the yarn trade, and the spinners followed the example of the manufacturers. Towards the end of October, there sprung up a better trade and large quantities of pieces changed hands, but at very unsatisfactory prices. In December a tolerable demand existed for goods all of wool, and the prices improved. Orleans and cobourgs were also in fair request.

There existed at the commencement of the year 1845 an active demand for combing wool, and also for stuffs. A fair business was transacted in orleans, cobourgs, and lastings, and all wool fabrics were much inquired after, and realized good prices. But in February and March the aspect of trade changed for the worse, and the markets were also depressed during April. Altogether the Spring trade may be accounted to have been a ruinous one, but in June a strong trade grew up for plain goods, particularly merinoes. A great amount of machinery however was standing unproductive, and the stocks of wool were full ones, except for the finer sorts. Before the end of Summer the sale of the better description of goods had improved, but there was not a commensurate improvement in price. The Autumn trade may be stated to have been exceedingly fluctuating, for two or three weeks the inquiries for goods were more numerous, but on the whole

much machinery stood unemployed, and such pieces as were disposed of, yielded no profit. This arose partly from the warlike news which from time to time reached us from America, paralyzing the trade to that quarter. Had not this been the case, it might have been expected that from the light stocks of stuffs in the hands of the American dealers, a favourable trade would have prevailed this season. In the Autumn, spinners were mostly running their machinery short time. Towards the end of the year, higher prices were obtained for goods. "The principal demand," to quote a report of this period, "being principally for heavy descriptions of goods, such as plain and fancy lastings, says, damasks, which had improved in price about five per cent.; for East-India camblets, some orders were given at an advance of two shillings a piece. Upon the whole, it may be affirmed that a general advance in goods took place varying from five to seven and a half per cent." But this rise could not be termed remunerative, when the manufacturers had to pay twenty per cent. more for yarns, and wages were higher. In November, combing wools ranged when compared with the prices in former years, at high rates, viz., strong hog wool at tenpence half-penny a pound; middle ditto, elevenpence half-penny; super, one shilling and a half-penny: middle wether wool, one shilling per pound; second ditto, elevenpence; super ditto, one shilling and three-farthings. To the general reader it may be stated, that hog wool is generally used for warps, and wether wool for weft. The foreign trade in stuffs this year had somewhat declined especially to the United States. The home trade proved an average one, but the great drawback on the manufacturer, this year, arose from the depression of prices, for it is noted as peculiarly one of competition and low prices.

Between the years 1840-5, a most astonishing extension of trade occurred in the stuff department. By comparing the drawback account of the former year with the latter, it is apparent that the latter had increased one-third in that short interval; and more astonishing still, that since the year 1830, the quantity of wool washed by the West-Riding worsted

manufacturers had grown to double the quantity. The following is the drawback statement for the year 1845:—

			£	s.	d.
Bingley District	..	..	653	5	2
Burnley and Colne District	..	..	696	3	7
Bradford	do.	..	6525	15	3
Halifax	do.	..	5214	12	0
Huddersfield	do.	..	328	19	3
Dewsbury	do.	..	868	13	4
Leeds	do.	..	465	7	0
Otley	do.	..	657	19	1
Keighley	do.	..	1852	0	4
Skipton and Addingham District.	..	..	41	13	8
Wakefield	do.	..	2468	11	2
			<hr/>		
			£19,872 19 10*		

The Halifax district had rapidly increased its consumption; the growth of the trade there had been the greatest in the worsted locality. But the stuffs manufactured at Halifax were of a much heavier description, requiring coarser wool, and less work than those of Bradford, which also in the last five years had largely extended its trade, and since the year 1830 had doubled its consumption of wool. A wonderful increase had also been witnessed at Wakefield during the last five years.

It may be estimated that the quantity of wool represented by the drawback of 1845 reached seventy-six millions pounds weight, and if we take at a rough estimate the quantity of English and imported wool consumed in the kingdom at one hundred and ninety millions of pounds, then the amount of wool represented by the drawback to the West-Riding worsted manufacturers, exceeds one third of the whole amount both of home growth and that imported.

Probably the very best evidence of the increase of the worsted manufacture within the last few years is derived from one of the Reports of Mr. Saunders, Superintendent Inspector of Factories, wherein he states, that in his district (which

\* It must be remembered, that as stated at page 489, the drawback accounts must be doubled subsequent to 1833, to compare them with those previous.



comprised the West-Riding,) there were in 1845, the large number of nineteen thousand one hundred and twenty-one power looms employed in the worsted manufacture, whereas in 1841 they only amounted to eleven thousand four hundred and fifty-eight in number ; also, that between the years 1843-5 there had been an increase in this district of upwards of ten thousand hands engaged therein.\* These are startling facts.

The opening of the succeeding year (1846) found the stuff trade in a depressed state, for although an average business was transacted in heavy dress goods, they were purchased at extremely low rates. In March, the wool market is mentioned as being exceedingly heavy, whilst the quantity consumed appeared only small when compared with the season of last year, and thus much spinning machinery stood idle. The piece market likewise was very dull for the Spring season, so that very many hands were unemployed both in spinning and weaving. But before Midsummer, the markets for pieces much improved, and were well attended by buyers of checked orleans and silk-striped paramattas, which were chiefly made to order, and all plain goods being in fair request, stocks were low. This trade for checked orleans and paramattas† continued through the Autumn. During the year the fancy trade appears to have been dull both for the home and foreign consumption. At the close of the year mixtures of silk and Alpaca were much sought after at higher prices. There had during this year been a diminution to a large amount in our export of stuffs. Our best customers, those of America and Germany, in 1846 shipped not much more than half their usual quantity ; and the home consumption, owing to the high prices of food, proved not extensive. On the whole, however, it may be classed among the better years of the worsted manufacture ; for it was characterised by a quiet trade at fair prices for many descriptions of stuffs.

\* Mr. Saunders' Report, 31st October, 1850.

† The term "paramatta" is now (1856) confined to Norwich manufacture of silk warp and worsted weft, but at the period mentioned in the text, fabrics afterwards designated cobourgs went by that name. The goods designated by the name of 'Paramatta,' took it from a town in New South Wales, where the surrounding country produces fine wool.

Throughout the spring of 1847 the chief demand consisted of orleans and paramattas, especially low descriptions of the former. It is mentioned in February that "the introduction of silk, along with black and coloured Alpaca, had given new life to the fancy trade;" the same authority states in March "that the business in pieces had much declined for some weeks past, whilst the spinners were limiting their production of yarn, except for Mousselines de laine, the trade in which had become both extensive and prosperous."\* When noticing in a former page the commencement of this branch of weaving, it was omitted to be recorded that in the north, Manchester and Bolton were its first seats, and along with Colne and its neighbourhood, they still continued to fabricate much of this description of goods.† Wool continued in very limited demand, the prices of Lincolnshire wool in Bradford market at this period were:—Super hog wool £13 to £13 10s. a pack; middle hog £12; low ditto £10 to £11. Super wether wool £12 a pack; middle quality £10 15s.; low ditto £10. Very much spinning machinery now stood unemployed. For the last two years the yarn trade had remained in a very depressed state, but in that period it had never reached so low a point as the present, when it was calculated that the production might be counted at twenty to twenty-five thousand gross of yarn less than that of three years previous. During the Summer, lustres and fancy goods were in good demand, and though the sale of other descriptions continued limited throughout the season, yet stocks did not increase. The manufacturers never exercised more caution in their affairs than during the year 1847, whereby the effects were less disastrous than might have been expected. Before the end of September there were very numerous failures in the metropolis and the

\* In March 1847 the price of grey Mousselines de laine mostly in demand, were for pieces twenty-three to twenty-five inches in breadth and twenty-nine yards in length, from six shillings and sixpence to nine shillings a piece: for those twenty-six to twenty-seven inches in breadth and thirty-three yards in length, from eight shillings and sixpence to eleven shillings and sixpence.

† It was at Newton Heath, near Manchester, that Messrs. Barratt, under the firm of Messrs. John Barratt & Sons, first manufactured orleans stuffs as mentioned at page 472.

provinces, and by the middle of October several insolvencies occurred in the worsted department. Coloured yarns and checked goods were in demand during the Autumn, but were only made to order; indeed for all descriptions of goods the stocks had not been so low for many years. Altogether, this was a memorably unprosperous year, so far as relates to the worsted manufacture.

None suffered more from the depression experienced in 1847 than the woolcomber. Ever since the year 1835 his condition had, like the hand-loom weaver, gradually become worse from the extended competition of machinery. The great cause of the peculiar hardship inflicted on these two classes lay in the fact that weaving and wool-combing are among the trades most easily acquired, and thus hosts of agricultural labourers, Irish, and others, were induced to learn these easily acquired handicrafts, and eventually the hands employed in them were too abundant. Besides the reduction of wages arising from the increasing use of machinery, all easily acquired trades are in the nature of things the worst paid. But to return: the distress of the woolcombers had become so great, that in October, this year, a meeting was convened in the Exchange Rooms, Bradford, to devise measures for their benefit; but without any practical result.

Unprosperous as the year 1847 proved to the worsted industry, yet, it appears that the cause did not rest in our foreign trade, which, on inspecting the table\* on the following page is seen to have fallen not much below that of the preceding year. And here it may, once for all, be mentioned, as a guide for properly estimating from these tables the extent of our export of worsted stuffs, that although through the clumsy classification in the Board of Trade returns, woollen and worsted stuffs are classed together, yet the former were of insignificant amount; and these tables are, on the whole, a valuable standard for indicating the increase or decrease in our yearly shipments of worsteds. And even as regards the actual amount give a near approximation to it.

\* Porter's Tables.



## EXPORT OF WOOLLEN AND WORSTED STUFFS.

	1843	1844	1845	1846	1847
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.
Russia .. ..	23,391	257,85	19,070	12,333	24,665
Sweden .. .	15,873	15,680	24,602	17,940	23,199
Norway .. .	6,527	5,806	8,596	8,042	8,526
Denmark .. .	774	532	1,297	2,010	2,970
Prussia.. ..	706	869	459	944	77
Germany .. .	705,009	572,947	560,998	397,963	326,037
Holland .. .	236,846	203,981	236,668	205,190	176,287
Belgium .. .	99,052	96,224	115,747	72,438	58,747
France .. .	44,109	51,905	58,470	49,975	28,146
Portugal, Azores, and Madeira .. }	46,578	38,022	25,634	17,873	14,897
Spain & the Canaries.. }	22,536	29,411	40,232	33,800	28,661
Gibraltar .. .	72,431	56,362	16,574	13,658	12,069
Italy.. ..	187,730	156,699	105,958	134,489	74,828
Malta .. ..	5,512	4,420	2,546	3,287	3,839
Ionian Islands	1,166	678	1,419	1,298	1,796
Turkey & the Levant .. }	23,701	31,908	42,174	25,398	48,308
Morea, and Greek Isles. }	506	1,564	1,658		
Guernsey, Jersey, Alderney, Man }	6,975	4,973	6,063	9,241	10,769
East Indies & China .. }	205,823	271,155	179,331	135,982	140,145
New Holland	15,742	9,280	23,346	26,475	22,439
Cape of Good Hope .. }	13,866	13,483	22,038	10,267	14,117
Other parts of Africa .. }	8,187	6,511	7,366	9,029	9,520
British North American Colonies .. }	65,762	154,322	182,561	159,778	145,905
British W. Indies .. }	23,913	19,581	18,353	15,787	15,688
U. S. of America.. .. }	412,827	545,019	327,817	225,734	354,206
Foreign W. Indies .. }	13,078	19,025	23,372	23,487	25,508
Brazil .. .	66,746	61,848	72,935	69,945	66,245
Mexico & the States of S. America. }	118,005	92,327	87,622	66,067	70,534
Totals ..	2,443,371	2,492,217	2,212,906	1,748,430	1,708,208

With all the hindrances which had been experienced in the course of trade for the last few years, the worsted branch still extended its arms and grew mighty. The proof of this is most undoubted upon casting the eye over the subjoined table prepared from a return presented to the House of Commons by the Factory Inspectors,\* and comparing it with that compiled in the year 1838.

NUMBER OF PERSONS EMPLOYED IN THE WORSTED  
FACTORIES IN ENGLAND, IN 1847.

COUNTIES.	UNDER 13 YEARS OF AGE.		BETWEEN 13 & 18 YEARS OF AGE.		ABOVE 18 YEARS OF AGE.		TOTAL.		
	M.	F.	M.	F.	M.	F.	M.	F.	M. & F.
Devonshire ..		1	10	33	14	52	24	86	110
Durham....	45	28	58	148	79	280	182	456	638
Lancaster ..	23	24	40	64	98	91	161	179	340
Leicester ..	2	4	247	291	487	759	736	1,054	1,790
Middlesex ..			15	1	9	2	24	3	27
Norfolk ....	17	16	83	292	106	831	206	1,139	1,345
Northampton	4	10	7	19	34	18	45	47	92
Nottingham..			3	33	15	14	18	47	65
Stafford ....				2	16	16	16	18	34
Surrey ....		7	3	16	8	22	12	45	56
Yorkshire ..	3,362	3,794	3,986	9,868	6,362	19,928	13,709	33,590	47,299
Total ....	3,453	3,884	4,452	10,767	7,228	22,013	15,133	36,664	51,797

From this table some important results are obtained. The total increase of the manufacture since the year 1838 in England amounts to sixty-four per cent. thus deduced:—

In 1838—31,606 persons were employed

In 1847—51,797 do.

The worsted manufacture had, in the interim, arisen in Devon, Surrey, and Middlesex, whilst it had ceased to exist, or been suspended, in Worcester, Warwick, Salop, Derby, Lincoln, Northumberland, and Chester, and had decreased in Nottingham, Stafford, and Lancaster. The worsted manufacture (including the hosiery and carpet branches) in the year 1847 prevailed only in eleven counties, and with the exception of Yorkshire, Leicestershire, and Norfolk, few factory operatives were employed elsewhere. Indeed, the West-Riding

\* Return of Factory Operatives in the United Kingdom, ordered by the House of Commons, on the motion of Mr. Brotherton, and printed April, 1847.

of Yorkshire employed ninety-four per cent. of the whole of the worsted factory operatives of England. There the increase had been so extraordinary that the worsted mill hands nearly doubled in number those of 1838. This extraordinary growth may in some degree be attributed to the labours of the woolcomber and hand-loom weaver, having of late years been to a considerable extent absorbed in factory operations ; and also, in some degree, to the restriction of labour by the Factory Act.

With the exception of a good demand for Mohair yarn, the prospects of the spinners did not improve for the first two months of the year 1848, but in the month of March, the improvement became so great that the spinning frames were running full time. In the piece market during the Spring season, the business transacted was very limited, but prices remained firm. Owing to the immense number of looms standing idle since the preceding Autumn, stocks continued exceedingly low. In the fancy department goods were in moderate request, but altogether the markets may be described as dull. This state of trade arose in a great measure from the events of the French Revolution and continental disturbances, which produced an extraordinary effect on the worsted manufacture, paralyzing all its transactions—and the provisions of the Ten Hours Act coming into operation in May, tended still further to reduce production. The yarn trade to the continent did not participate, to the same extent, in the depression as that of pieces. It was estimated that the amount of goods manufactured in the Summer did not reach to above one-third of what the machinery could produce. Fortunately whilst the continental trade proved so failing and unsatisfactory, that for home consumption, and for trans-atlantic shipment, continued on the whole an average one during the Summer months. But notwithstanding, most of the worsted mills in the Bradford district were only worked three days a week, and the hands out of employment counted a large number. Fancy goods were mostly in request. A new variety of silk striped orleans and cobourg cloths was in great favour throughout the year among the merchants, very much to the injury of the Alpaca manufacturer. By the end of July great improvement might



be perceived in the worsted market—confidence began to revive—and the mills to run longer time: thus affording more employment to the hands. Autumn was a season of great activity in the stuff market, and the stocks being light, prices advanced. On the whole the state of trade continued satisfactory to the end of the year. Lastings and orleans cloth were especially in request, and on these an advance in price was obtained. This year may particularly be noted as one wherein a great impulse was imparted to the fancy trade of Bradford. The prices of the principal worsted goods at the close of the year may be seen in the following list of prices.\*

WIDTH. INCHES.	WORSTED GOODS.				PRICES.
25 to 26	3/4 Princettas, black, 28 yards, per piece	..	..	..	30/ to 62/
49..50	6/4 Ditto	..	..	..	
25..26	3/4 Lastings	..	..	..	26/..56/
50..51	6/4 Ditto	..	..	..	
26..27	3/4 Camblets	..	..	..	26/..32/
39..40	5/4 Ditto	..	..	..	36/..60/
	(Another kind is quoted 32 in. in breadth & 56 yds. in length.)				
24..25	3/4 Figured Linings	..	..	..	10/..20/
38..42	6/4 Ditto	..	..	..	15/..30/
37..42	6/4 Plain Orleans	..	..	..	13/..60/
38..42	6/4 Twilled ditto	..	..	..	16/..80/
30..31	4/4 Wildbores	..	..	..	25/..34/
44..45	6/4 Ditto	..	..	..	34/..58/
30..32	4/4 Shalloons and Cubicas	..	..	..	23/..58/
	(Neither 5/4 nor 6/4 Shalloons quoted.)				
25..27	3/4 Fancy Lastings and				
	Gambaroons	..	..	..	10/..50/
40..41	6/4 Figured Merinoes	..	..	..	26/..43/
	(No Plain Merinoes quoted.)				
40..41	6/4 Alpaca Figures	..	..	..	34/..47/
25..27	3/4 Cotton and Worsted Damasks, colours,	..	..	..	19/..40/
25..26	All Worsted Damasks, black	..	..	..	29/..49/
39..40	42/42 Says, black, 40 yards,	..	..	..	33/..74/
29..30	4/4 Plainbacks	..	..	..	20/..58/
	Any other width in proportionate price.				
	The following are in addition to the List of 1843:—				
26..27	3/4 Serge de Berry, 28 yards,	..	..	..	38/..72/
24..25	Moreens, black 24	..	..	..	22/..33/
26..27	3/4 Shaded Damasks 28	..	..	..	32/..35/
30..32	4/4 Dobbies, black	..	..	..	20/..27/

The above list upon comparison with the one given for the year 1843 (a year of low prices) proves that with the

\* Du Fay's Circular for December, 1848.

exception of figured linings and shalloons, the prices were even with, or lower than those in 1848. The fall of prices arose in part from the increased duties laid upon the import of our worsteds and mixed goods by the German Union, so that our trade to that quarter suffered greatly, as will be observed on reference to the table of exports hereafter printed. There was also a large falling off in the gross amounts of our exports of stuffs and yarns to all quarters when compared with that of the preceding year. A cycle of three unprosperous years, including the railway mania of 1845 and the panic of 1847, terminated its course with 1848. But the worsted spinner and manufacturer, by the prudence of his trade operations and dealings, suffered immeasurably less from the disastrous consequences of those years, than the other large trading classes of the community.

Prosperous as the stuff trade became in the closing months of 1848, it greatly improved in the first months of the succeeding year 1849, which proved throughout a satisfactory year, characterised by a large demand, both for home and foreign consumption. The sale of goods became so rapid that the Ten Hours' Factory Act was often in its spirit evaded, or infringed by the system of relays, in order to meet the demand. In January, East-India camblets were in much request at a considerable advance in price. Orleans cloths and cobourgs also found such ready sale as to realise in price from fifteen to twenty per cent. more than former rates; but this advance scarcely met the rise in wool and yarn. In May, standard qualities of orleans and lastings were low in stocks and rose higher in value, and were chiefly made to order. At this juncture, Mr. Saunders, the Factory Inspector, in his half-yearly Report\* thus pertinently alludes to the worsted trade of the West-Riding:—

In some months the worsted trade has been exceedingly good, in fact, flourishing. Turn-outs for wages have not been uncommon, and fifteen shillings a week has been frequently given for good female weavers. That there is a greater adjustment between supply and demand in the worsted fabrics, in my opinion, than in any other, especially in the Bradford district, which produces so many of the pieces worn by the labouring and middle classes of all countries. Not only for some

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\* Mr. Saunders' Report, dated 30th May, 1850.

months now, has there been no spinning frames idle, but there has been a considerable addition made to the power-looms, and men have been employed for longer periods in some mills than the law allows to females. The spinner, who must have been for three years a great loser, has lately had an opportunity of recovering much of his former position, and the profits of the manufacturer must have been considerable. At the commencement of the period referred to, wool was exceedingly low; what was bought by the spinners was well bought, and no doubt in considerable quantities. When the price of wool rose with the Spring wool sales the spinner had the advantage, and the demand for manufactured goods becoming considerable and imperative, they kept it. Both, therefore, have been profitably employed, and there are many orders in it which will not be executed before July. But there is a quieter feeling prevailing generally throughout the district, a buying more according to necessity than speculation; and if there should be a good clip I think employment will be plentiful in the worsted districts for some time to come.

But these flattering terms did not long hold true, for the next month (June) owing to the agitation in Germany, the market especially for fine goods declined, and though lastings, low qualities of orleans, and cobourgs, were in fair request, they could be purchased upon much easier terms. This state of the market continued until August when prices began again to mount, and throughout the latter portion of the year, the course of the spinner and manufactuer may be stated as one even current of prosperity. Wool, on the whole, in the year 1849, was, as compared with some former years, at a moderate price, as shewn in the table set out below,\* which also exhibits the rates of yarn. Stocks of goods of all kinds were low, and the orders for yarn to export extensive, and at remunerating prices. At the close of the year orleans lustres were

*YEAR.	MIDDLE WETHER.	MIDDLE HOGS.	DOWN EWES.	HALF-BRED HOGS.	36s COMBED YARN.
	per lb.	per lb.	per lb.	per lb.	per gross.
1839	13 $\frac{1}{2}$	15 $\frac{1}{2}$	14 $\frac{1}{2}$	18 $\frac{1}{2}$	10 0
1840	13	13 $\frac{1}{2}$	14	16	9 6
1841	12	12 $\frac{1}{2}$	11 $\frac{1}{2}$	14	9 0
1842	10 $\frac{3}{4}$	10 $\frac{3}{4}$	10 $\frac{1}{2}$	12 $\frac{3}{4}$	8 0
1843	12	11 $\frac{1}{2}$	12	14	9 9
1844	13	13	13	16 $\frac{1}{4}$	9 6
1845	12	12 $\frac{3}{4}$	12 $\frac{1}{2}$	16	8 9
1846	11 $\frac{1}{2}$	12 $\frac{1}{2}$	13	15 $\frac{3}{4}$	8 6
1847	10 $\frac{5}{8}$	11 $\frac{1}{8}$	11 $\frac{1}{2}$	13 $\frac{3}{4}$	8 0
1848	9 $\frac{1}{4}$	10 $\frac{1}{4}$	10	11 $\frac{1}{2}$	7 0
1849	11 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{3}{4}$	13 $\frac{1}{2}$	11 0



at a high price, and lastings, moreens, and damasks also in excellent demand. Many new varieties of fancy goods were introduced in 1849 and sold rapidly. The markets throughout the year were steady, fair prices were obtained, and the year 1849 ranks in the annals of worsted industry as a prosperous one, somewhat compensating for the losses of previous years. On turning to the table of exports, it exhibits a satisfactory return. Our shipments to Germany and America had been large and also to Italy and India.

Like the preceding year, that of 1850 is a very marked one for prosperity in the worsted districts. In truth, were a spinner or manufacturer of modern times to point out two years of consecutive good trade, he would undoubtedly select these two for steady lucrative business; not one where a fortunate few, engaged in particular departments, made large profits, but where the mass of the masters pursued a steady and profitable trade, and where the workman, along with the boon of cheap provisions, enjoyed high wages. So auspiciously had the trade in the first months of the year progressed, that in March, manufacturers, particularly of lastings and orleans cloths, were employed in executing orders received last year. Alpaca goods (especially 'mixtures') were in much request, so that large stocks, which had accumulated in the manufacturers' hands, were quickly sold. Yarns were also at a very remunerating price as large orders were received from Russia, which for many years had taken immense quantities of our yarns, being one of our largest and steadiest purchasers of that article. This high price of yarn indeed tended somewhat to retard the operations of the piece maker, and to considerably curtail his profits. Throughout the half-year ending in July, the export of stuffs to America and the North of Europe had been very large, and most manufacturers as well as spinners were working to order at remunerating prices; some advance even in July being obtained on orleans, cobourgs, lastings, and moreens. The advance in price was maintained in the month of August and even rose higher in September, when the abundant harvest raised all branches to the highest point of eminent prosperity. The demand and

supply throughout October continued equal, and the former prices were realized, but in the succeeding months the markets became somewhat duller. Up to the end of the year, however, there was a fair trade, particularly in lastings for the Italian market, which could not be supplied in sufficient numbers. Thus ended the year 1850, a year ever memorable in the ledger of the worsted spinner and manufacturer. As an instance of the satisfactory prices of this year, the following quotations have been gathered from Du Fay's circular,\*—most of the articles exhibit a considerable advance from the rates of 1848 given in a preceding page.

	s.	s.		s.	s.
Twilled Orleans .. ..	18/to	80/	4/4 Wildbores .. ..	30/..	40/
Plain ditto .. ..	15/..	60/	3/4 Princettas .. ..	38/..	75/
Alpaca Figures .. ..	30/..	52/	42/42 Says .. ..	37/..	80/
4/4 Plainbacks .. ..	24/..	68/	3/4 Camblets .. ..	32/..	40/
4/4 Shalloons .. ..	28/to	65/	3/4 Lastings .. ..	32/..	61/

Of the extent of the worsted manufacture in the year 1850, a very accurate and comprehensive view is presented in a return prepared by the Factory Inspectors in accordance with an order of the House of Commons.† This return contains a mass of figures bearing on the subject of this volume, and cannot therefore be well omitted, though it is feared the load of statistics, with which it is necessary to encumber this portion of the work, may weary the general and incurious reader.

\* Du Fay's Circular for May, 1850.

† Return, ordered by the House of Commons, of the number of cotton, woollen, worsted, flax, and silk factories, 15th August, 1850. The Return, besides the factories in England, embraces those in Scotland and Ireland. There were in Ireland two worsted factories, namely, in Dublin, for spinning, moved by thirty-six horses water power, having one thousand five hundred and fifty-two spindles, and employing seventy-six hands. In Scotland there were six worsted factories employed in spinning, namely, in Ayr, four with steam engine of one hundred and eleven horses power and thirty-five water power, moving six thousand two hundred and sixty-four spindles, and employing three hundred and eight hands; in Lanark one factory, with steam engine of ten horses power, turning ninety-six spindles, and employing three hundred and three hands; in Renfrew one factory, with water-wheel of fifty-three horses power, moving three thousand and forty-four spindles, and employing one hundred and thirty-five hands.

## WORSTED FACTORIES IN ENGLAND IN 1850.

COUNTIES.	NO. OF FACTORIES.	NO. OF SPINDLES.	NO. OF POWER LOOMS.	AMOUNT OF MOVING POWER.		HANDS EMPLOYED.
				STEAM.	WATER.	
Factories employed in Spin- ning:—						
Devon .. .. .	7	5,122	.. ..	4	94	306
Durham .. .. .	3	10,868	.. ..	93	45	466
Essex .. .. .	1	40	.. ..	0	2	5
Lancaster .. .. .	6	13,690	.. ..	16	110	559
Leicester .. .. .	19	27,525	.. ..	540	0	1,821
Norfolk .. .. .	5	19,216	.. ..	161	10	742
Nottingham .. .. .	1	1,520	.. ..	30	30	86
Salop .. .. .	2	6,290	.. ..	35	18	205
Stafford .. .. .	1	524	.. ..	8	6	30
Westmoreland .. .. .	3	2,584	.. ..	0	38	98
Worcester .. .. .	11	15,146	.. ..	173	104	972
York .. .. .	163	314,948	.. ..	3,000	355	17,366
	222	417,473	.. ..	4,060	812	22,656
Factories employed in Wea- ving:—						
Lancaster .. .. .	1	.. ..	270	20	20	171
Norfolk .. .. .	6	.. ..	428	80	0	658
York .. .. .	90	.. ..	12,116	1,024	56	14,887
	97	.. ..	12,814	1,124	76	15,716
Factories employed in Spin- ning and Weaving:—						
Durham .. .. .	1	1,780	210	25	.. ..	300
Lancaster .. .. .	4	13,500	842	140	2	1,091
Surrey .. .. .	1	788	11	.. ..	30	71
York .. .. .	149	431,109	18,734	4,222	576	37,902
	155	447,177	19,797	4,387	608	39,364
Factories not included in either of the above de- scriptions:—						
Leicester .. .. .	3	.. ..	.. ..	47	.. ..	429
York .. .. .	16	224	6	151	5	750
	19	224	6	198	5	1,179
Total of Worsted Factories	493	864,874	32,617	9,769	1,501	78,915

Here we have 493 worsted mills in England with 864,874 spindles, and 32,617 power-looms, and employing 78,915 hands. It will be observed that Salop and Worcester have



re-appeared in the list of worsted producing counties; Northampton has disappeared from, Essex with Westmoreland have been added to it. Mr. Saunders, the Factory Inspector, in his report, dated 31st October, 1850, thus notes the growth of the manufacture *in his district*, which comprised (with two or three slight exceptions before noticed,) the West-Riding of Yorkshire.

In the year 1838 there were 29,246 persons employed

„	1843	„	37,060	„
„	1845	„	48,097	„
„	1850	„	74,891	„

The increase of power-looms is even more astonishing, standing thus:—

1836	1841	1843	1845	1850
2,768	11,458	16,870	19,121	29,539

But the contrast even between the years 1845 and 1850 is exceedingly striking, when it is considered that only five years had intervened.

YEAR.	STEAM POWER.	WATER POWER.	STEAM AND WATER.	INCREASE PER CENT.	PERSONS EMPLOYED.	INCREASE PER CENT.
1845	7,211	1,047	8,256	..	48,097	..
1850	9,044	981	10,025	21	74,841	55

To complete the table given in the preceding page, it is considered that it will be interesting to mark the growth of trade in the worsted districts of Yorkshire, and the ensuing statement is for this purpose placed before the reader. It will be observed that there is some trifling discrepancy between the two tables as to the total result of the Yorkshire power of production, but the latter table prepared *about the year* 1850 may be relied upon, having been compiled by Mr. Baker, the Factory Inspector, from actual returns of the spinners and manufacturers.

STATEMENT OF WORSTED SPINNING & WEAVING FACTORIES  
IN THE WEST-RIDING ABOUT THE YEAR 1850.

## SPINNING.

PARISHES.	NO. OF FIRMS.	POWER.			SPINDLES.	PERSONS EMPLOYED.		
		STEAM.	WATER	BOTH.		MALES.	FEMALES	TOTAL.
Bradford ....	67	1,067	71	1,138	150,986	2,678	3,567	6,245
Halifax .....	42	812	129	941	138,110	2,111	3,513	5,624
Wakefield ....	17	461		461	34,167	487	708	1,195
Keighley ....	13	149 $\frac{1}{2}$	81 $\frac{1}{2}$	231	28,642	388	625	1,013
Bingley .....	4	45	44	89	8,264	151	155	306
Birstal .....	9	206		206	21,796	573	650	1,223
Otley .....	2	64	70	134	11,036	250	335	585
Leeds .....	3	32		32	3,016	15	84	99
Hull .....	1	16		16	582	74	33	107
Kildwick ....	3	25	12	37	2,076	59	48	107
Dewsbury ....	1	20		20	4,088	53	74	127
High Hoyland	1	75		75	8,204	255	357	612
	163	2,972 $\frac{1}{2}$	407 $\frac{1}{2}$	3,380	410,967	7,094	10,149	17,243

## SPINNING AND WEAVING.

PARISHES.	NO. OF FIRMS.	POWER.			SPINDLES.	LOOMS.	PERSONS EMPLOYED.		
		STEAM.	WATER	BOTH.			MALES.	FEMALES	TOTAL.
Bradford ...	74	2,310	184	2,494	231,348	10,107	6,925	13,820	20,745
Halifax .....	25	997	57	1,054	97,811	3,064	3,102	5,103	8,205
Wakefield ....	1	16		16	480	163	14	168	182
Keighley ....	14	198	124	322	27,844	1,484	872	1,709	2,581
Bingley ....	9	203	55	258	18,566	1,198	751	1,221	1,972
Birstal .....	6	157		157	13,850	893	272	1,179	1,451
Otley .....	2	45		45	2,612	186	134	184	318
Leeds .....	2	75		75	6,700	214	56	381	437
Kildwick ....	3	66	50	116	5,448	469	228	561	789
Batley .....	2	30		30	3,296	234	71	357	428
Cottingham ..	1		2	2	128	1	2	2	4
Calverley ....	5	124	17	141	10,848	745	448	937	1,385
	144	4,221	489	4,710	418,931	18,758	12,875	25,622	38,497

## WEAVING.

PARISHES.	NO. OF FIRMS.	POWER.			LOOMS.	PERSONS EMPLOYED.		
		STEAM.	WATER	BOTH.		MALES.	FEMALES	TOTAL.
Bradford ....	53	643	12	655	7,535	1,745	6,389	8,134
Halifax .....	8	99 $\frac{1}{2}$	2	101 $\frac{1}{2}$	976	1,325	1,447	2,772
Keighley ....	8	61	18	79	835	138	725	863
Bingley ....	4	58		58	537	204	457	661
Leeds .....	3	36	3	39	441	47	393	440
Kildwick ....	3	10		10	132	26	71	97
Addingham ..	1		7	7	67	23	38	61
	80	907 $\frac{1}{2}$	42	949 $\frac{1}{2}$	10,523	3,508	9,520	13,028

Supplementary to this view of the productive power of the worsted trade in the West-Riding, the subjoined statement respecting the drawback on soap, (being the last of the series, the duty having been repealed shortly afterwards,) may appropriately be presented. An important inference will be gathered from this document, for it proves distinctly that the consumption of wool had not increased in the district during the preceding five years; although, undoubtedly the mills and hands had, to a great extent. This apparent anomaly is, upon a slight reflection easily explained; the manufacture of mixed goods had been extended, but not that of pure worsted stuffs, so that the increase is to be found in goods fabricated with cotton or silk warps, combined with Alpaca, and the finer descriptions of worsted weft.

			£	s.	d
Bingley District	..	..	809	19	6
Burnley and Colne District		..	762	15	7
Bradford	do.	..	7024	18	5
Halifax	do.	..	5777	13	6
Huddersfield	do.	..	225	16	6
Keighley	do.	..	2133	3	0
Dewsbury	do.	..	974	10	4
Otley	do.	..	352	7	9
Skipton and Addingham District.	..		56	0	11
Wakefield	do.	..	2327	9	6
Leeds	do.	..	595	4	1
			<hr/>		
			£21,039	19	1*
			<hr/>		

This amount of drawback is equivalent to about eighty millions of pounds weight of wool washed by the worsted manufacturers of the West-Riding. A Bradford woolstapler, writing to Mr. Southey, (see page 521 subsequent) estimates

\* For the sake of uniformity with the previous accounts, the Burnley and Colne district is included in this account of drawback, but with this slight exception, (which does not affect the result materially) the account includes only the worsted districts of Yorkshire.



the quantity of wool annually consumed in the district twelve miles round Bradford, at 400,000 packs. This calculation would not be beyond the mark, when it is remembered that it includes Leeds, Dewsbury, Huddersfield, and the other seats of the woollen manufactures, which do not affect the above amount of drawback, except by using combers' noils.

Among the causes which contributed to the prosperous seasons of 1849-50 in the worsted industry, may be adduced the reasonable price of wool in those periods, as exhibited in the following statement of the average prices of English combing wool per pound, and also of Australian fleeces of average quality, from the year 1840 to 1850.\*

	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	1850
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
English } Combing }	1 5	1 4	1 2	1 0	1 3	1 3½	1 3	1 2½	1 1	1 0	1 1
Australian	1 9	1 7	1 6	1 5	1 7	1 9	1 8	1 4	1 1	1 2	1 5

It is thus shown, that on the whole, there had been, one year compared with another, a gradual decline in prices of wool, which unquestionably assisted the spinner and manufacturer in their operations, and tended to augment the consumption of worsted stuffs.

It is exceedingly difficult to form any accurate estimate of the value of the worsted manufacture at any particular period, because the data derived from the best sources are so uncertain, and often conflicting. Mr. Forbes, in his comprehensive and most judicious Lecture on the worsted manufacture, presented a view of the value of the manufacture in 1850,† which I gladly transfer to these pages, as an appropriate appendage to the Returns of the worsted factories, whence the basis of his calculation is derived.

Of the total yearly value of the worsted manufactures produced, it is impossible to form anything more than an approximate estimate. No reliable data exist from which to form a definite calculation of the raw material consumed. We know,

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\* Extracted from Du Fay's Circular.

† Lecture on the Worsted Manufacture, delivered by Henry Forbes, Esq., of Bradford, before the Society of Arts.

indeed, that the importation of wool from foreign countries and our Australian colonies has increased from 13,000,000 of lbs. weight in 1815, to 81,000,000 of lbs. in 1851. But of the growth of British wool we know scarcely anything precise and accurate. Mr. Southey, an eminent wool-broker in London, has made some very elaborate calculations on this subject, and the result he brings out, is a yearly growth of 228,000,000 of lbs. weight. I am favoured, through the kindness of Mr. Wood, Chairman of the Board of Stamps and Taxes, with an account of the quantity of wool, on which an allowance of duty on the soap used has been made in the year ending the 5th January, 1852; and from this it would appear, that the wool washed before weaving was 147,498,218 lbs. I quite agree with Mr. Wood, that, from some cause or other, this is much below the actual quantity used; but I am inclined to think Mr. Southey's estimate is above it.

Referring to the *worsted* division of goods produced from wool, and taking into consideration the capabilities of the spindles, the number of which I have already stated, I estimate the total quantity of yarn spun at about 57,000,000 of lbs. weight per annum, which would require a consumption of about 100,000,000 of lbs. of fleece wool. Of this quantity, about 9 per cent is short wool, and 16 per cent noils, or short wool extracted from the long in the process of combing, both of which are passed forwards for clothing or strictly woollen purposes. The remainder 75,000,000 of lbs., would be divided into

60,000,000 lbs. English sorted wool, at 1s. 2d. per lb. .	£3,500,000
15,000,000 lbs. colonial and foreign, at 1s. 9d. . . .	1,312,500
Add other raw materials used in the manufacture, as	
cotton, silk, dyewares, &c. . . . .	1,500,000
Direct wages paid . . . . .	3,000,000
Indirect wages, as rent, wear and tear of machinery,	
coals, soap, oil, interest of capital, &c., &c. . . .	3,187,500
Total . . . . .	£12,500,000

This I estimate to be distributed throughout the country, in something like the following proportions:—

West-Riding of Yorkshire: goods and yarns . . .	£8,000,000
Lancashire: de laines and other light fabrics . .	1,500,000
Leicestershire: worsted hosiery . . . . .	1,200,000
Norwich goods, Irish stuffs, Devonshire long ells, &c. &c.	1,300,000
Scotland: worsted stuffs (not including shawls) . .	500,000
Total . . . . .	£12,500,000

That reaction follows excessive action is a true maxim in trade. The unusual excitement and prosperity of the last two years had given an extraordinary extended power of production in the worsted manufacture. New mills had sprung up in abundance, and for the next three years the manufacturers paid the penalty for overproducing. During the Spring of the year 1851 the demand for plain goods was very limited, but mixed qualities were in favourable request.

In consequence of the increased price of material, restricted production became the rule of business, and much machinery was stopped. In the month of May mixed fabrics in Alpaca commanded a good sale, but orleans and cobourg cloths could only be sold at a great sacrifice. At no time, even in the worst periods of 1847, had the difference been wider between the cost of wool and cotton, added to the price of labour, and the prices realised for the manufactured article. The rates of wool in June were even higher than those of the clip in the preceding year, whilst staple goods sold at a much less price now than then. Towards the end of Summer, the trade in dress goods showed symptoms of amendment. Of late years large quantities of low orleans and cobourgs had been made by the Lancashire manufacturers, and brought to Bradford market, but these had been much diminished in number, many of the makers having declined to pursue so unproductive a business. One notable feature of the worsted manufacturers' operations this year must be noticed, namely, the general abridgment of production, so that the stocks on hand were even less than in the previous year. Very large numbers of looms stood idle during the closing months, of 1851, the masters preferring this cessation of their labours, rather than, with the high price of materials, venturing to produce for stock. Extending over the twelve months, the production of fancy goods had been upon a very restricted scale. The export of stuffs this year was an average one, and commensurate with the amount of manufacture. The year 1851 may be with certainty described as one of comparatively limited production and small profits.

For the last three years our shipments of stuffs had been, in general amount, steady. A deficiency in one quarter had been compensated for in another. Since the year 1848 our trade to America had recovered somewhat of its wonted vigour, whilst the demand for Germany though vastly grown of late years, still did not approach to its former magnitude. Italy too, which took off so many of our heavy goods, had also increased her orders; but we find in the export to China a large decrease.



EXPORT OF WOOLLEN AND WORSTED STUFFS.

	1848	1849	1850	1851
	Pieces.	Pieces.	Pieces.	Pieces.
Russia .. .. .	9,612	21,571	12,921	7,243
Sweden .. .. .	28,723	37,954	23,661	29,271
Norway.. .. .	8,030	10,902	12,705	13,404
Denmark .. .. .	4,201	10,156	9,116	7,565
Prussia .. .. .	329	4,280	7,411	2,703
Germany .. .. .	266,355	332,374	407,837	464,547
Holland.. .. .	166,413	216,410	205,025	185,202
Belgium .. .. .	47,775	113,803	79,788	66,967
France .. .. .	28,040	39,575	42,259	32,147
Portugal, Azores, } and Madeira.. }	22,987	21,057	19,064	21,752
Spain and the } Canaries .. }	13,358	14,138	17,647	20,715
Gibraltar .. .. .	12,859	12,997	9,690	12,893
Italy .. .. .	55,663	112,151	114,877	131,950
Malta.. .. .	5,073	8,110	4,963	3,377
Ionian Islands ..	1,232	2,731	2,614	2,272
Turkey and the } Levant .. .. }	51,729	71,955	109,256	33,737
Morea and Greek } Isles .. .. }	754	2,141	933	147
Guernsey, Jersey, } Alderney, and }	11,669	9,574	4,395	2,643
Man .. .. .				
East Indies .. .. .	28,972	36,901	27,154	30,840
China.. .. .	136,114	138,436	116,084	115,340
New Holland ..	20,824	30,354	44,984	47,746
Cape of Good Hope	12,877	14,252	19,143	14,888
Other parts of } Africa .. .. }	9,441	11,101	18,617	10,630
British N. Ameri- } can Colonies .. }	98,370	103,022	133,986	156,497
British West In- } dies .. .. }	9,319	12,559	16,788	20,956
United States of } America .. .. }	276,295	427,658	525,244	419,880
Foreign West In- } dies .. .. }	16,061	14,153	14,902	21,599
Brazil .. .. .	49,787	29,113	34,885	60,508
Mexico and the } States of South }	119,439	141,483	86,448	97,511
America .. .. .				
Totals .. .. .	1,512,301	2,000,911	2,122,397	2,034,930

The year 1851 is rendered memorable by the Great Exhibition of the Works of Industry of all Nations, in which worsted fabrics held a not unimportant position. The Jurors, in their able Report on worsted stuffs, divided them into five classes :—

- 1 Fabrics composed entirely of Wool.
- 2 Ditto of Wool and Cotton.
- 3 Ditto of Wool and Silk.
- 4 Ditto of Wool, Silk, and Cotton.
- 5 Ditto of Alpaca and Mohair, mixed with Cotton or Silk.

“The first of these divisions” observe the Jurors “comprises the well known fabrics called merinos, double-twilled, so denominated from the Spanish wool of which they were at first manufactured. In this article, the French have always had an unquestionable superiority, and many of the specimens in the Exhibition fully maintain their reputation. There are some goods of this class, however, in the Bradford department but little inferior to them. In single twilled merinos the worsted manufacturers of Yorkshire have at all times had the decided pre-eminence. Shalloons, says, serges, lastings, all stout and heavy articles, are manufactured chiefly at Halifax and Keighley. Damasks for curtains and hangings are also made at Halifax, and this branch of the trade has arrived at great perfection, both in excellence of material and elegance of design. Of the fabrics composed of wool and cotton, the articles denominated cobourg and orleans cloth, the former being twilled and the latter plain, have been staple manufactures, of which the consumption has been immense: they are made chiefly at Bradford and Keighley. Many of the silk warp and worsted weft fabrics are distinguished by their richness and durability. The Alpaca and Mohair manufactures (carried on at Bradford and Bingley) are remarkable for their softness and brilliancy, and the great variety of purposes to which they are applicable. It is in the production of articles in which wool of various kinds is combined with cotton and silk, that the superiority of the British manufacturer is most apparent; no such goods

being produced on the Continent in any extent, or of any great excellence. This result could not have been obtained had not the skill and enterprise of the manufacturers been aided by that of the worsted dyers. The chemical processes required, in order that a fabric composed of both vegetable and animal substances, may be made to receive an equal and regular dye, are necessarily varied and intricate; but so successful have been the efforts of the dyers, that goods made of white cotton warp and worsted weft can be dyed quite as perfect in colour as French merinos composed of wool alone. All that is now wanting in the English worsted trade, is, that the same enterprise should be exhibited as heretofore in the working up of materials into fancy goods." The Jury divided worsted and woollen yarns in four classes, worsted, woollen, Alpaca, and Mohair; and subdivided worsted yarns into three classes, merino yarns, lustre yarns and genappe, and small ware yarns. The Jurors considered that the French excelled in merino yarns, though some excellent specimens were shewn by English spinners. A copy of the Jurors' Award on worsted stuffs, and the several descriptions of yarns, is printed in the Appendix, whereby the reader will be able to form an opinion as to the best manufacturers and spinners. The Jurors also presented an interesting Report on the various shawl fabrics in which great praise is ascribed to the Norwich manufacturers.

Since the year 1828, when Mr. Hubbard made his calculation of the quantity of wool grown in the kingdom, a large increase had undoubtedly arisen, and in the year 1851, Mr. Southey, the eminent London wool broker, instituted inquiries to ascertain, with what precision the subject allowed, the increase in the number of sheep, and weight of fleece, in the several counties of England. He published the result in the introduction to his valuable work on Colonial wools, and the following are condensed extracts from it:—

*Lincoln*:—In this the largest producing wool county in England, the increase of sheep within the last twenty years had been inconsiderable, although the fleece had materially gained both in weight and quality. In the district between Boston and Grimsby many thousand acres of grass land had recently been ploughed up, and there sheep had decreased to the amount of twenty thousand, but in the Wold



district high farming fully made up this deficiency in number, and at the same time the wool had become more plentiful and finer, weighing nine pounds a fleece, the average of the Marsh lands.

*Yorkshire* :—The second wool producing county in England. The flocks had undoubtedly increased since 1805. The introduction of a finer race had lightened the fleece, while a cross with the Hampshire breed tended to give it weight. These points considered, the conclusion was decidedly in favour of a heavier return of wool from the same sheep.

*Leicester* :—There has been a considerable increase in the number of sheep since the year 1828, but the wool had been rendered lighter by a cross with Downs, and was estimated at five pounds and a-half to the fleece.

*Norfolk* :—Owing to the increase of sheep and greater weight of fleece, added to the large proportion of half-bred Leicesters introduced since 1828, it might safely be concluded that the quantity of wool produced in this county was much greater than formerly.

*Gloucester* :—The increase of sheep was estimated at fifteen to twenty per cent., with little or no variation in the weight of the fleece, estimated at six pounds.

*Cambridge* :—The weight of fleece was set down at from six to seven, and in some instances eight to nine pounds, whilst the increase of sheep had been considerable, chiefly owing to the improved system of farming.

*Dorset* :—Long considered one of our foremost counties in breeding, and the Down sheep there it was estimated had increased thirty per cent. in number, and the fleece half a pound. The other breeds had also increased in number and weight of fleeces.

*Wilts* :—It was the universal opinion among the intelligent Wiltshire farmers, that the number of sheep and weight of fleeces had increased from fifteen to twenty per cent. during the preceding twenty years.

*Devonshire* :—Increased number since 1828 equal to twenty per cent., and average weight of fleece larger, being nine pounds in the grease.

*Cumberland and Westmoreland* :—The increase of stock assumed to be from ten to fifteen per cent., whilst the wool had become lighter, but improved in quality.

*Derby* :—There the breed of sheep had decreased, owing to its becoming more a dairy county.

*Somerset* :—It was thought that the number of sheep had been nearly doubled, but within the preceding twenty years there had not been any material alteration in the weight of the fleece.

*Cornwall* :—The increase of sheep since 1828, estimated at thirty per cent., and the increase of fleece one pound and a-half.

*Worcestershire* :—Since 1828 the supposed increase of sheep was estimated from ten to fifteen per cent., and the weight of fleece one pound.

*Hampshire* :—Since the same period it was believed that the stock of sheep had increased one third, and the weight of fleece half a pound. The number of sheep in the Isle of Wight estimated at thirty-five thousand.

*Bedford* :—Within the preceding twenty years the increase of sheep was reported at twenty per cent. The average weight of Leicesters and half-bred fleeces, set down at six pounds, whilst the Downs weighed four pounds.

*Berkshire* :—The clip of wool continued the same as it had done for the previous fifteen years.

*Sussex* :—Had not materially augmented its flocks since 1828, but the fleece had improved half a pound in weight, and averaged four pounds.

*Kent* :—In Romney Marsh the increase of sheep had been considerable, the fleece averaging five and a-half to six pounds.

*Shropshire* :—Its flocks had increased from ten to fifteen per cent., and the fleece improved one and a-half to two pounds.

*Suffolk* :—It was estimated that the sheep of this county numbered sixty thousand, and since 1828 they had increased per fleece half a pound, caused by the introduction of half-bred Downs and Leicesters, the average weight being four pounds and three quarters.

*Herefordshire* :—The flocks were supposed to have increased threefold—the fleeces were heavier. All wools grown here were lower in quality, but much increased in quantity.

A correspondent at Bradford, writing to Mr. Southey on the subject of the increase and quantity of wool in the kingdom, thus expresses himself:—

“It is almost universally admitted that Mr. Luccock’s calculation of the quantity of wool, grown in 1805, was erroneous, and that it much exceeded his statement. That a very considerable increase, since that period, has taken place in its growth is also undoubted; but the simultaneous slaughter has nearly kept pace with it, this sacrifice being requisite to supply the wants of a rapidly increasing population. With regard to weight, it is known that the introduction of a purer race into the counties of Lincoln, Cambridge, Yorkshire, &c., has lightened the fleece, and to a certain extent brought down the average, as compared with the old standard there; but, on the other hand, the pure Down counties have introduced a cross with the Hampshire breed, thus tending to produce a heavier fleece. When these points are duly considered, the balance decidedly must be in favour of a heavier return of wool from the same number of sheep. So far as my own observations are brought to bear upon this subject, I am inclined to think that, on an average, the fleeces are unquestionably heavier.”

“It is, however, apparent that the increased means for working up British wool are now equal to our entire production, and even much more, and at no former period was this fact so clearly manifested. The last census, although it is to be hoped furnishing less reliable data than the one now in the course of progress, nevertheless affords some elucidations, as regards the main question at issue, which should not be wholly disregarded. Its calculation, in reference to England, if I mistake not, sets down the total number of farmers at 212,455, holding on an average 151 acres each, and leaving us to take the ratio of one sheep per acre and the fleece at 5lbs., it would follow that the product would be equal to 668,348 packs; but I am of opinion that the entire production of Great Britain and Ireland is upwards of 950,000 packs, and that, of this quantity, taking Bradford as the centre and mart of the Worsted Trade, and within a radius of 12 miles, upwards of 400,000 packs are there annually consumed.”\*

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\* Southey on the Rise, Progress, and present State of Colonial Wools, pp. 7-15. London, 1851.

Somewhat similar to the preceding year in its features of trade, was that of 1852. It opened with a slight advance in the price of yarn, which for numbers from 30s to 36s, had sold as low as eight shillings and sixpence the gross. The price also of cotton warps advanced this year as much as eighteen pence a pound, and great caution was displayed by the manufacturers during the year, which occasioned stocks to be reduced to the lowest point. Large numbers of looms were standing idle during the Spring, and though the production increased as the Summer advanced, yet the supply continued limited. The manufacturers of Alpaca and fine orleans stuffs experienced great difficulty owing to the excessive price of two-fold cotton warp, which prevailed throughout the year, preventing much of these being made except to order. In the Autumn of this year there were much less stocks in the warehouses than in the previous one, and a strong determination was evinced to maintain prices. This undoubtedly curbed for a time enterprise, but eventually proved the best course. A cautious spirit prevailed among manufacturers of every grade in carrying on their business, so that the year 1852, if one of little gain, cannot be termed one of much loss. The export of stuffs, as compared with that of the previous year, had slightly retrograded.

The worsted spinners, throughout most part of the year 1853, obtained large orders for spool yarn from Lancashire, which tended to keep up prices, and the machinery running. The common sorts of yarns at the early part of the year were quoted at twelve shillings a gross. Less and less wool goods were made, such as merinos, lastings, and moreens, in consequence of the high price of the material. A lucrative trade was carried on by a few manufacturers in what were termed "Circassians," fancy and flounced goods or robes. For most descriptions of pieces there was a great falling off in production. In Autumn very many looms were standing, simply because the master, with the high prices of cotton, Alpaca, and worsted yarns, forbore to accumulate stock, and only made to order. Thus, at the termination of the year there remained only an unusually small stock of goods in the



warehouses. It may be remarked, that the taste in worsted fabrics prevailed more and more for fancy mixed textures, and the manufacturers of the old descriptions of goods changed the character of their business. It cannot be remarked that the year 1853 stands distinguished for a good home trade, but the foreign one is among the best. On reference to the table of exports, it will be found, that an enormous number of stuffs were sent to the United States and Australia, far beyond the legitimate demand.

Notwithstanding the smallness of the stocks of pieces on hand, there appeared no inducement at the commencement of the year 1854 for the manufacturer to abandon the system of contracted production, which had for so many months been carried out, and which had, from the high price of material and other causes, answered well, and kept prices firm, and wool from advancing. The best makers of orleans and cobourg pieces obtained fair rates for their goods, and the severity of trade chiefly fell on the manufacturers of the lower qualities. Alpaca lustres, which had been in favourable demand, receded during the Spring and Summer fifteen per cent. in price; and Mohair articles were at a low quotation. Towards the end of the Summer a great stagnation of trade occurred, and there were many failures in the worsted department. Now began to be felt, in its full force, the evil effects of the over extension of productive power, which had arisen during the last five years. Had not the manufacturers as a body curtailed the hours of labour, from time to time, the consequences of an excessive supply, far beyond the regular demand in the markets, would have been severely felt. But, as in the year 1847, masters exercised great prudence in their dealings, and thus somewhat abated the ill effects of the crisis of 1854. Within a few months the price of wool fluctuated between eighteen pence and twelve pence a pound, so uncertain were the operations of this unsatisfactory year. The falling off in the export of stuffs was enormous, especially to the glutted markets of the United States and Australia.

An improved tone ushered in the year 1855, and throughout the trade in it continued a better one than that of the

preceding. But many causes still contributed to depress business operations, and not least, the war with Russia. A class of goods had of late obtained very favourable notice, namely those made of the bright-haired wools of Lincolnshire, Nottinghamshire, and East Yorkshire, such wools being adapted for goods possessing a lustrous appearance, which were in much request.\* At the time of the clip this year, the stocks of wool, owing to the diminished consumption for the last ten months, were heavy in the woolstaplers' hands, nevertheless, prices instead of retrograding, in truth were rising. During the Summer a large amount of business was transacted in orleans and cobourgs, chiefly for home and American consumption. The mills were fully employed, and mostly to order, whilst stocks were unusually low. It was observed, that our staple trade in the Bradford district had never been based upon a surer foundation than in the latter six months of the year 1855. This was evinced by a total absence of speculation, and the demand being a legitimate one, there arose a steady profitable trade. Thus the disastrous year of 1854, in which a considerable number of weak manufacturing firms were ruined, ultimately led to a beneficial result, by enabling the better class of masters afterwards to control the prices so as not to sell, as had sometimes been the case, at a ruinous loss to meet an emergency. Altogether the year 1855 stands as one of good demand and fair profits. Towards the end of the year the stringency of the money market, which bore especially upon those engaged in the home trade, in which four months' bills are mostly given, and the high price of corn, occasioned somewhat of a falling off in business transactions. As regards yarns, the supply throughout October, November, and December, was not commensurate with the demand, which principally arose from orders for the export markets. Reviewing our export trade in stuffs, it appears that there had been a considerable decrease, especially to British North America, the United States, and Australia, where the markets had been gorged during the

\* This kind of wool was in former times chiefly used for warps; but had now been adapted for weft, and thus imitated in lustre the Alpaca fabrics.

last two years. In this year the prices of the chief description of stuffs were mostly lower than in 1850, as will be observed on comparing the following table with that at page 509.

	s.	s.		s.	s.
6/4 Plain Orleans .. ..	10	to 60/	4/4 Wildbores .. ..	36	to 62/
6/4 Alpaca Figures .. ..	36	.. 49/	3/4 Princettas .. ..	34	.. 71/
6/4 Plain Cobourgs .. ..	14	.. 80/	42/42 Says .. ..	36	.. 83/
4/4 Plainbacks .. ..	23	6 .. 67/	3/4 Camblets .. ..	30	.. 37/
4/4 Shalloons .. ..	27	6 .. 64/	3/4 Lastings .. ..	30	.. 61/

All these rates are for black colours, except Alpaca Figures.

Probably the best gauge of the relative prices of stuffs is the rate at which orleans stuffs are selling, and the following table indicates their prices for the last ten years:—

PRICES PER YARD OF COMMON ORLEANS ON THE 1st OF  
THE MONTH DURING THE YEAR.

	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855
January ....	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6 $\frac{1}{2}$	4 $\frac{5}{8}$	4	6 $\frac{1}{2}$	7 $\frac{7}{8}$	4 $\frac{3}{4}$	5 $\frac{1}{2}$	6 $\frac{1}{8}$	4 $\frac{7}{8}$
February ....	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6 $\frac{1}{2}$	5	4 $\frac{1}{4}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	4 $\frac{3}{4}$	5 $\frac{1}{2}$	6	4 $\frac{7}{8}$
March .....	4 $\frac{1}{2}$	4 $\frac{1}{4}$	6 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{1}{2}$	6 $\frac{3}{4}$	7 $\frac{1}{4}$	5 $\frac{1}{4}$	5 $\frac{1}{2}$	5 $\frac{7}{8}$	5 $\frac{1}{4}$
April .....	4	4 $\frac{1}{4}$	6 $\frac{1}{2}$	4 $\frac{1}{4}$	4 $\frac{1}{2}$	6 $\frac{1}{4}$	7	5	5 $\frac{1}{2}$	5 $\frac{1}{4}$	5 $\frac{1}{4}$
May .....	4	4 $\frac{1}{2}$	6	4	4 $\frac{1}{4}$	7	5 $\frac{7}{8}$	5	6	5 $\frac{3}{4}$	5 $\frac{1}{2}$
June .....	4	4 $\frac{3}{4}$	6 $\frac{3}{4}$	3 $\frac{7}{8}$	4 $\frac{1}{2}$	7 $\frac{1}{4}$	5 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{4}$
July .....	4	4 $\frac{1}{2}$	7	3 $\frac{3}{4}$	4 $\frac{3}{4}$	7 $\frac{1}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$
August .....	4	4 $\frac{1}{2}$	6 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{3}{4}$	8 $\frac{1}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	5 $\frac{1}{4}$	6 $\frac{1}{8}$
September ..	4 $\frac{1}{4}$	4 $\frac{1}{4}$	7	3 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6 $\frac{1}{4}$	5 $\frac{1}{2}$	6 $\frac{1}{8}$
October ..	4 $\frac{1}{4}$	5	5 $\frac{3}{4}$	3 $\frac{3}{4}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	6
November ..	4 $\frac{1}{4}$	5 $\frac{3}{4}$	4 $\frac{1}{2}$	3 $\frac{3}{4}$	6	7 $\frac{1}{2}$	4 $\frac{3}{4}$	6	6	5 $\frac{1}{2}$	5 $\frac{3}{4}$
December ..	4	6	4 $\frac{1}{2}$	3 $\frac{3}{4}$	6 $\frac{1}{4}$	7	5	5 $\frac{1}{4}$	6	5 $\frac{1}{8}$	5 $\frac{1}{2}$
Average ..	4 $\frac{1}{8}$	4 $\frac{3}{4}$	6 $\frac{1}{8}$	4 $\frac{1}{16}$	4 $\frac{1}{12}$	7 $\frac{2}{3}$	5 $\frac{3}{4}$	5 $\frac{2}{8}$	6	5 $\frac{3}{4}$	5 $\frac{2}{3}$

Many English worsted manufacturers sent specimens of their productions to the Paris Exhibition opened this year. It was there apparent, as it had been at the London Exhibition, that whilst our neighbours, the French, excelled us in the fabrication of all wool stuffs, they could not compete with us in the mixed fabrics, such as orleans cloths and Alpaca lustres, which attracted much attention. The Bradford Chamber of Commerce considering that it would tend to the benefit of the West-Riding worsted trade, appointed a Deputation to proceed to Paris for the purpose of examining the various kinds of machinery exhibited for producing worsted manufactures, together with the manufactures themselves. The Report of the



Deputation is printed in the Appendix, and is a very valuable document well worthy of attentive perusal. It will be seen that the French grow combing wool of fine and long fibre ; their machinery did not, on the whole, appear equal to that of England, but a peculiar method of French preparing is pointed out. Of course mule spinning is nearly universal in the worsted manufacture in France. The French yarns were also of a commendable class. There was not a double twilled merino, so extensively produced in France, nor a single specimen of fancy goods made all from wool, shown by English manufacturers. The beauty and excellence of the French and Saxon merinoes exhibited, elicited great commendation. It has been supposed that the French possess peculiar advantages for making their merinoes, in the quality and spinning properties of some of their wools, which render them peculiarly adapted for warps ; that their method of sizing renders the yarn both flexible and soft ; that their processes of preparing and spinning are superior to ours, and finally, that the bonus given by the French Government upon these goods, rendered competition a matter of considerable difficulty. The Deputation however, thought there were no insuperable difficulties to prevent the most complete success, if our manufacturers would apply their energy and skill to the production of these merinoes.\*

\* It appears that some of our best informed English worsted manufacturers are of opinion that it is hopeless for us to attempt to compete with the French in merinoes. Titus Salt, Esq., the Chairman of the Bradford Chamber of Commerce, in a comprehensive and well-reasoned speech, delivered at a Grand Demonstration in favour of the Reduction of the Import Duties on French Wines, in July 1856, thus touches on this subject:—"By the Report presented to the Bradford Chamber of Commerce by the Deputation sent to Paris, in 1855, for the purpose of investigating the actual condition of the worsted trade in France as compared with our own, from which it appears that the French produce, from their own in combination with Colonial wools, goods which by their intrinsic beauty of texture and dye, leave every competition hopelessly in the rear. The prices these goods are sold at are such that we have long since abandoned their manufacture ; and the Deputation, unable to find out the causes of this undeniable superiority, were obliged to ascribe it to the well-known truth that a trade once established in a certain locality cannot be carried on with the same success at another place, though the latter may, to all appearances, possess even superior advantages. The merinos and de laines, together with some mixed fabrics, as shown in the Paris Exhibition of 1855, or displayed in the shops of Paris, meet the demand of the wealthier classes of society, not only in France but throughout the world."

On referring to page 475 there will be found a clear and most interesting narrative by Mr. Milligan, of the Bradford manufacture, down to the year 1840. This narrative it is considered will be best continued here. To have broken it up, and incorporated it with the preceding notices of the trade of each particular year, would have rendered it disjointed. It is a compact and lucid description of the course of the worsted trade in the Bradford district for the last fifteen years, and forms a most valuable supplement and commentary on the preceding pages.

Even so recently as 1841 the fancy trade at Bradford was very little cultivated, and it is surprising how little good taste was displayed in the selection of the various styles of fancy manufactures. I am not aware that mohair west was then at all in use at Bradford for ladies' dress goods, although, subsequently, such very rich and beautiful goods have been made with this material. On looking over our list of manufactures in March, 1842, I find the following goods are comprised in it, manufactured and sold by us in that month.—Plain alpacas forty-two inches wide, twenty-eight yards long, at prices ranging from thirty-eight shillings to eighty shillings per piece. Fine worsted double twills at six shillings per yard. "Parisiennes" at from thirty shillings and sixpence to fifty-nine shillings. Six-quarter orleans at from thirty shillings to sixty-two shillings. Paramattas, three-quarters, six-quarters, and seven-quarters wide at from thirty-seven and sixpence to seventy-five shillings. Silk warp alpacas at from thirty-eight to seventy-five shillings. Mohair lustres at forty-eight shillings. Checked mohair lustres at fifty-two shillings and fifty-six shillings. Fine three-quarter alpaca grooms at seventy two shillings and sixpence. Three-quarter diagonal twills at twenty-eight shillings. Alpaca checks for dyeing into colours at fifty-six shillings. Alpaca and silk handkerchiefs at twenty-eight shillings per dozen. Three-quarters worsted grooms at thirty-eight shillings per piece. Three-quarters summer cloths at from thirty-four shillings to forty-seven shillings. Russell cords at forty-two shillings. Six-quarters merinoes at forty-four shillings. You will infer from such a list as this, that the fancy trade at this time was making a fair start in Bradford; many firms no doubt made as great a variety of goods as ourselves. There is one article included in the above list which attracted a great deal of attention, and produced large profits to those engaged in it; I refer to the figured orleans called "Parisiennes," perhaps there never was a more decided hit than this. I do not know to whom belongs the merit of its introduction into Bradford. I believe there have been various claimants; it had a most successful run for two or three years, and then expired very suddenly, from a well-known cause to which I need not here refer.

In March, 1843, I find we were manufacturing goods called "cobourgs" at from thirty-six shillings to sixty-three shillings, which were merely a lighter description of what we had previously called "paramatta cloth." It was not until long after this time that cobourgs began to be made with single cotton warps, in which they have now attained to so great perfection. During this year the alpaca



trade made rapid strides, the article was evidently very much in favour both in the United States and Germany, as well as (to a more limited extent) in the home market. I am unable to state the number of manufacturers of this cloth in 1843, but I am not aware that there were up to this point any other alpaca spinners than Messrs. Salt, Jas. Whitley, and ourselves; and as regards this particular branch of trade, to which our attention was for several years very prominently directed, I would here remark, that Mr. Salt commenced the manufacture of the article in or about 1844, and that this trade in its higher branches has now fallen into very few hands, Messrs. Salt, Sons, & Co., John Foster & Son, and J. & R. Turner, being now the leading and most successful makers of fine alpaca goods. To pursue my narrative—during the years 1843-4-5 we experienced a steady and remunerative demand for our plain silk warp and fancy alpacas, which latter we made in great variety. Referring to our list of manufactures in March, 1844, I find it consists of much the same variety as that of March, 1842; the orleans are, however, reduced in value, and a few additional sorts of cloth, as “princettas,” (which is simply a sharper handling cloth than a paramatta) at thirty-seven shillings for forty yards; grograms at thirty-five shillings; twilled alpacas at forty shillings; ribbed alpacas at forty-five shillings to sixty-two shillings; alpaca scarfs at twenty shillings per dozen; merinoes at thirty-three shillings to forty shillings.

In March, 1845, there is but little variation, grograms and princettas being more in demand. Our list still preserves as great a variety of fabrics, but the orleans cloth is much changed in its character, and has assumed the name of “demi lustre” or “lustre orleans,” the weft being made exclusively from bright haired Yorkshire and Lincolnshire wools, such as were previously used only for warps, and were for goods intended by the merchants to substitute for the lower priced alpaca cloths. Our list at this time comprises above one hundred varieties of cloth.

In March, 1846, the same varieties of alpacas, orleans, cobourgs, princettas, linings, figured goods, plaids, coatings, &c., as in previous years. Early in 1847 we made colored checked orleans in considerable quantity, and found them of tolerably easy sale. Up to this time these goods did not appear to have been extensively manufactured at Bradford, at least we had not seen them, and they were regarded by our customers as a good novelty. They were sold at thirty-five shillings per piece, or fourteen pence per yard. They were speedily copied in lower cloth, and the following year were reduced to twenty shillings, and even much lower. 1847 was an unfortunate year for the mercantile interest, and the trade of Bradford suffered considerably. Alpaca goods experienced great stagnation this year, and the price of alpaca wool fell as low at one time as fourteen pence per pound, which, coupled with the absence of demand for other descriptions of goods, induced several parties, who subsequently abandoned it, to enter into this trade. In this year, however, a great impulse was given to the fancy trade, and since then invention has been ever on the rack for something new.

In this year we manufactured our usual variety of alpaca goods as well as ribb'd orleans, alpaca checks, colored checked orleans, crapes, princettas, grograms, and various other summer coatings, double twills, &c. In 1848 there arose a great demand for silk striped goods, and these were extensively manufactured by ourselves and many others, in orleans and cobourg cloth, dyed after being woven. Varieties of fancy coatings were of ready sale during this year, and especially a grogram woven with black worsted, (formerly black alpaca) having a thick cotton



warp, around which was twisted a fine thread of white, yellow, or gold silk, producing a sparkling, speckled effect; this article we had manufactured exclusively for Messrs. A & S. Henry & Co., a year or two previous to its becoming more commonly known.

Silk striped goods, as well in alpaca as orleans and cobourgs continued in good demand the whole of this year, our manufacture of plain alpacas giving way considerably in their favour. Umbrella alpaca cloth, introduced by Mr. Salt, was also one of our fancy cloths this year. But one of our more striking novelties consisted in silk sprigs thrown upon alpaca mixture ground,—the stripe of silk being loosely woven in at the back of the cloth, only the small flower shewing on the face. We also, this year, used a considerable quantity of linen weft woven in small figures upon cotton warps. This article, I believe, was manufactured chiefly for the United States. Colored “mottled,” or as it was also called “marled” weft was very extensively used by the trade generally during this year. This trade has, in another form, assumed the character of permanency, the weft used for the better class of mottled goods being more or less mohair and alpaca. Near the close of 1848 we commenced manufacturing a class of goods known as embroidered alpacas, but which did not result favourably for us, we suppose on account of the price. These goods were made by hand in swivel looms, each of which used one pair of large shuttles for the weft of the piece, and eight or ten smaller shuttles containing the colored or white silks which formed the flowers or embroidery. We subsequently obtained Letters Patent for printing their natural colors upon these silk flowers, the silk being woven in white upon a dark or colored ground. This patent appeared so meritorious, that we secured it for France and the United States, as well as for our own country, and we hope it may yet be appreciated. During the years 1849-50-51 we used it extensively, but chiefly upon white silk floated in stripes on alpaca or colored grounds: these goods were displayed by us with some credit at the Exhibition in Hyde Park, in 1851, a prize medal being awarded to us.

In 1849, our manufacture of plain alpacas for dyeing, decreased in favour of goods of a fancy character, consisting of mottled and mixed wefts, silk stripes and figured goods, silk mixture programs, cords, &c., to which a great variety of fancy names were given, no way indicative of the character or description of cloth. Such, for instance, as “Madonnas,” “Albert cords,” “Californias,” “Cassinetts,” “Codringtons,” and a host of such names. Early in 1850 there set in a demand for alpaca mixtures, which proved quite a godsend to all engaged in that trade, inasmuch as it swept off a large accumulation of low alpaca, which had been long a complete drug in the hands of the manufacturers; and there is but little doubt that this trade would have proved an enduring one, if alpaca mixtures only had been bought by the merchants, but the floodgates were opened to every description of material which would produce a cloth having any characteristic of an alpaca mixture, and the veriest rubbish which can be conceived was manufactured and sold under this name. It is not therefore a matter of surprise that the trade should have ceased, as it did suddenly for a time, at the close of 1852, after having sent up alpaca wool to the extravagant price of three shillings per pound. There is indeed every probability that this branch of trade will revive, as there is certainly no article which can surpass an alpaca mixture, either in cheapness, durability, or neatness of appearance, for the wear of the humbler classes, or for ladies’ travelling dresses. It is not doubted that the Exhibition of 1851 gave a great stimulus to our fancy manufactures, since which event, great progress has been made in the

production of useful and elegant novelties. I no longer think it necessary to speak of our own manufactures; what I have already stated may suffice to give an idea of how and by what means the trade of Bradford has been developed.

In the early months of the year 1856 the spinners were fully employed upon contracts entered into last year, but these were not profitable, in consequence of the subsequent rise in the cost of material. Most of the manufacturers were making goods to order, but some, who could not obtain prices commensurate with the rates of yarn, preferred letting their looms remain idle. One of the main causes which occasioned the rise of wool and yarn, sprung out of the progressively increasing demand for yarn to export to the Continent, where of late years low qualities of goods had been extensively made, to the injury of our home manufacturers. At no period were the prices of pieces less profitable than this year; but the manufacturers had, during the last two or three years, conducted their business cautiously, resisting all enticements to speculation whilst wool and yarn bore such high rates, and resolutely curtailing their productions when not employed to order, or prices were below the remunerating point. Thus stocks were kept low, and prices upheld, so that from time to time when the demand improved, prices also improved. This course of business continued during the Spring and Summer months, and especially in the manufacture of wool goods,—merinoes, lastings, and moreens. In August the piece markets were much brisker, and higher prices obtained; a good demand for stuffs suitable for the Autumn trade arose, and many orders for seven-quarter cobourgs were received from America. Stocks being low, the manufacturers chiefly worked under contract, and their establishments were in full operation. During the Autumn months business in the spinning department continued very steady, but many of the manufacturers were only partially employed.

During the first six months of this year, 1857, the state of trade in the worsted districts has been exceedingly unsatisfactory. Much spinning machinery has been comparatively unemployed, so high has been the price of wool compared with that of yarn. For the months of January and February, the contracts entered into in November and December kept the large spinning establishments well employed; but since the



close of those contracts, great slackness has prevailed. The piece market continued throughout these six months flat, and prices unremunerating when compared with the excessive rates of warp and weft. From such cause (the high price of material) every branch of the manufacture is at the moment this is written, depressed; but this course of affairs cannot last long, either the rates of wool and cotton warps must recede, or the prices of the manufactured goods considerably advance, and assuredly the present stagnation in worsted is only temporary.

It may be remarked, that of late years the line of demarcation between the worsted districts of Yorkshire and Lancashire, has been broad and evident. The Lancashire manufacturers, for a long period, have, besides *Mousselines-de-laine*, been actively engaged in the production of low qualities of orleans and cobourg cloths, which they bring to Bradford market. Ever since the introduction of the powerloom, the Lancashire manufacturers, both of cotton and worsted, have worked with the greatest economy of labour. Hence the two-loom system has been long since adopted in that district in weaving low worsted goods. An attempt was made last year by a manufacturer in the neighbourhood of Shipley to introduce this system, which occasioned a riot amongst the workpeople, who endeavoured to stop the machinery. Their efforts were, however, frustrated. Thus the low rates at which inferior qualities of orleans, cobourgs, &c., can be woven by two-loom power in Lancashire, hinders competition by the Bradford manufacturer. Hence he often finds it better, upon receiving orders for those kinds of goods, to contract with the Lancashire manufacturer, who, upon receiving the warp and weft, delivers the manufactured piece at Bradford at one shilling and ninepence each, out of which threepence has to be paid for the dressing, reducing the actual remuneration for weaving to eighteenpence; whereas the cost to the Bradford manufacturer would be one shilling and fivepence a piece for weaving alone, besides the rent of his mill, steam power, gas, overlookers, &c., making it evident that the latter cannot in those kinds of goods compete, under the one-loom system, with his Lancashire neighbour. Thus the manufacture of the finer descriptions of goods,



both worsted and Alpaca, is more and more concentrating in the Bradford district. There is, however, ample room for every description of manufacture, in the large and varied field of the worsted department, as the following list of the numerous kinds of fabrics, professed to be made by a Bradford firm, testifies. This list of stuffs, extracted from a circular forwarded to the Bradford merchants, is presented to the reader for the purpose of giving him a bird's eye view of the wonderful extent, and variety of the ramifications of the industry which is the subject of these pages.

5/8 and 3/4 Amiens.	6/4 38 to 47 ins. Merinoes.
6/4 Alpaca Lustres.	6/4 and 7/4 Lustre Orleans (Spanish Proportions.)
6/4 Figured do.	3/4 and 6/4 Figured do. (do.)
5/8 Buntings.	3/4 and 6/4 Worsted Princettas.
3/4 Camblets.	3/4 and 4/4 Cotton Warp do.
4/4 do. (Mexican make.)	6/4 7/4 and 8/4 Cotton Warp do.
5/4 and 6/4 do. (Dutch make.)	3/4 and 7/4 do. (Stout make.)
31 ins. 56 yds. do. (E. India & China make)	4/4 Plainbacks or Cubicas of one Twill.
3/4 and 6/4 do. (Yarn dyed.)	6/4 and 7/4 30 yds. Plainbacks.
30 ins. Cambletees.	5/4 60 yds. do. or Alepines.
3/4 and 6/4 Worsted Crapes.	7/4 33 yds. Queen's Cloth.
3/4 and 6/4 Union do.	3/4 Worsted Figured Russells.
3/4 Mixed do.	3/4 Union do. do.
3/4 Grandrelle do.	3/4 Silk Wp. Plain do. or Italian Cloth.
3/4 and 4/4 Cotton Wp. Cubicas (Spanish proportions.)	3/4 Cotton Warp Plain do. do.
3/4 Crape Coatings (Yarn dyed.)	3/4 Worsted Serge de Berrie.
6/4 36 yds. Cobourgs.	3/4 Union do.
7/4 do. do.	4/4 Shalloons or Cubicas of two Twills.
8/4 37 yds. do. (Shawl Cloth.)	5/4 and 6/4 do. (Dutch make)
3/4 and 6/4 Worsted Damasks.	6/4 Plain Shotts (Yarn dyed.)
3/4 and 6/4 do. do. (Yarn dyed.)	6/4 Silk Figd. Striped Shots (Yn. dyed.)
3/4 and 5/4 Union do.	40/27 yds. Says.
6/4 8/4 and 10/4 do. do.	40/40 yds. do. (Stout make.)
3/4 and 6/4 do. do. (Yarn dyed.)	40/40 yds. do. (Merino make)
3/4 and 6/4 Merino do.	40/40 Cotton Wp. Says (Stout make.)
4/4 Worsted Damask Aprons.	40/40 do. do. do. (Fine and light make—Spanish proportions.)
4/4 and 6/4 Worsted Dobbies.	3/4 Worsted Stockinets.
6/4 French Figures.	3/4 Mixed do.
6/4 Worsted Full Twills.	3/4 Grandrelle do.
6/4 Cotton Wp. do.	3/4 Elastic do. or Webbing.
3/4 Grograms or Russell Cords.	3/4 or 6/4 Summer Cloths or Stout Plain Orleans.
3/4 Plain and Fancy Gambroons.	3/4 Denmark Satteens.
3/4 30 and 36 yds. Linings.	4/4 5/4 and 6/4 Wildbores.
6/4 30 and 36 yds. do.	3/4 Tammies.
3/4 and 6/4 Italian Crapes.	4/4 Tournay Cloth.
3/4 Figd. do. Cloths (Silk & Cotton Warp)	Cheripa Cloth.
3/4 and 6/4 Worsted Lastings.	Pelliones.
31 ins. 28 yds. do. (China make.)	Ponchos and Mantas.
3/4 and 6/4 Union do.	Yergas.
3/4 Fancy do.	
3/4 Moreens.	
6/4 Mohair Figures.	

At the close of the year 1856, a return of factories, &c., was prepared, in accordance with an order of the House of Commons; and the following table is extracted therefrom, exhibiting a view of the worsted manufacture at this period, similar to the one for the year 1850.

## WORSTED FACTORIES IN ENGLAND IN 1856.

COUNTIES.	NO. OF FACTORIES.	NO. OF SPINDLES.	NO. OF POWER LOOMS.	AMOUNT OF MOVING POWER.		HANDS EMPLOYED.
				STEAM.	WATER.	
Factories employed in Spin- ning :—						
Devon .. .. .	2	632	.. ..	3	5	20
Essex .. .. .	1	40	.. ..	2	.. ..	5
Lancaster .. .. .	2	5,092	.. ..	60	.. ..	222
Leicester .. .. .	11	13,015	.. ..	580	.. ..	1,018
Norfolk .. .. .	5	23,464	.. ..	156	10	727
Oxford .. .. .	1	1,056	.. ..	12	.. ..	50
Salop .. .. .	2	5,280	.. ..	36	20	201
Surrey .. .. .	1	1,576	.. ..	..	20	70
Westmoreland .. .	2	1,802	.. ..	..	29	41
Worcester .. .. .	10	18,510	.. ..	134	85	610
York .. .. .	183	558,878	.. ..	3,862	358	18,516
	220	629,345	.. ..	4,845	527	21,480
Factories employed in Wea- ving :—						
Lancaster .. .. .	2	.. ..	792	70	.. ..	419
Leicester .. .. .	1	.. ..	5	2	.. ..	6
Norfolk .. .. .	5	.. ..	349	61	.. ..	460
Stafford .. .. .	4	.. ..	405	54	55	899
Worcester .. .. .	11	.. ..	387	195	.. ..	1,495
York .. .. .	98	.. ..	11,287	1,068	89	10,558
	121	.. ..	13,225	1,450	144	13,837
Factories employed in Spin- ning and Weaving :—						
Lancaster .. .. .	5	15,272	1,573	170	.. ..	1,446
York .. .. .	145	653,709	24,011	6,309	630	48,672
	150	668,981	25,584	6,479	630	50,118
Factories not employed in either of the above descrip- tions :—						
Nottingham .. ..	1	.. ..	.. ..	1	.. ..	7
York .. .. .	19	.. ..	.. ..	407	.. ..	1,248
	20	.. ..	.. ..	408	.. ..	1,255
Total of Worsted Factories	511	1,298,326	38,809	13,182	1,301	86,690

This table is not correct in at least one respect. Durham is not in the return although the manufacture is there, as in the year 1850, carried on extensively. Since the last return in that year, the county of Nottingham seems to have almost ceased to be a seat of the worsted manufacture. It has one worsted factory but it is neither employed in spinning nor weaving. In Devonshire, the manufacture has dwindled to insignificance; Lancashire has also receded much from its former position in spinning; in Leicestershire, the hoisery branch has decreased; Norfolk has increased in spinning, but the few power-looms there in 1850 are now fewer. Staffordshire has ceased to spin, but has now four small factories for power-looms. Worcestershire has extended its spinning operations and begun weaving by power. But the crowning fact of this return is the one showing that the great stream of the worsted industry flows in the West-Riding, and that in this respect the other counties are but small tributaries to it. There are in England 511 worsted factories giving employment to 86,690 persons, and of these Yorkshire (that is the West-Riding) alone contains 445 factories with 78,994 workpeople.\*

Many important deductions flow from a consideration of this table. When compared with the one at page 510, it will be found that in the intervening six years, notwithstanding there are only 18 additional factories, there are upwards of 430,000 more spindles, 6,200 more looms, and 17,000 more workpeople employed than in the year 1850. Whilst worsted factories increased in number between 1838 and 1850 to about eighteen per cent., there has only been an augmentation in their number of about four per cent. during the last six years; but mark, in the year 1850 the average number of spindles to each factory only reached 2,300, now they amount to 3,500 spindles; and also a like increase in the proportion of power-looms.

\* The total number of worsted factories in the United Kingdom is 525, giving employment to 87,794 persons. Of these Scotland contains 8, with 895 hands, viz:—6 for spinning, in the counties of Aberdeen, Ayr, and Renfrew, with 21,137 spindles; 2 for weaving, in the latter county, with 135 looms. Ireland, has in the counties of Cork, Dublin, Queen's, and Waterford, 6 worsted factories, with 5,086 spindles and 209 hands. Only 2 power-looms are returned.



Again, it appears that according to the nominal horse power employed, a much larger number of spindles are now driven than in the year 1850, when the average number of spindles to each horse power ranged at 87, whereas at the present time it extends to 104. The present tendency in the spinning department is evidently to concentrate the business in few hands, for there are fewer spinning factories than in the year 1850, although there has since been such a considerable increase of production. On the contrary, the weaving factories are much more numerous, and the number of looms employed by each manufacturer solely engaged in weaving, is less.

Certainly the present production of yarn and pieces is, in proportion to either the horse power, the number of spindles, or the looms, very much greater than it was a few years past. This, as regards the horse power, arises from the very many improvements made of late in the steam engine, whereby its capabilities, compared with that of former days, are two-fold augmented. To quote the words of Mr. Nasmyth, the eminent engineer, "from the same weight of steam machinery, we are *at least* obtaining fifty per cent. more duty or work on the average, and in many cases the identical steam engines, which in the days of the restricted speed of 220 feet per minute yielded 50 horse power, are now yielding 100." Among both spinners and manufacturers there is also a greater inclination to work the engine up to its full power than in former years. Then as to spinning frames; they are now made with all the nicety of clock-work, and where formerly it was thought to be a capital performance for the cylinder to make 250 revolutions a minute, now 360 is a common velocity. Since the increased use of what is termed the "dead spindle," and which is adapted for some descriptions of yarn, the quantity of thread spun per spindle is very much larger. In power-looms 80 or 90 picks a minute were considered as good speed, now the shuttle will traverse the web 160 or 180 times. And whilst the quantity of labour, performed by the machinery has thus increased, it may be asserted that each person engaged in the manufacture executes or tends more work, for it will be seen that the number of hands is less to each nominal horse power than in 1850.

A glance at the subjoined statement will further elucidate the above positions, and exhibit the progress of the manufacture both in England, and the West-Riding, during a term of nearly twenty years past.

## ENGLAND.

	1838.	1850.	1856.
Number of Factories .....	415	493	511
„ Horse Power employed	7,166	11,270	14,481
„ Spindles.....	..	864,874	1,298,326
„ Power Looms .....	..	32,617	38,819
„ Persons employed....	31,606	78,915	86,690

## WEST-RIDING.

	1838.	1850.	1856.
Number of Factories .....	348	418	445
„ Horse Power employed	5,791	9,389	12,723
„ Spindles.....	..	746,281	1,212,587
„ Looms .....	..	30,856	35,298
„ Persons employed ....	29,336	70,905	78,994

From the factory returns presented in the previous pages, a very gratifying fact is deduced. Anterior to the passing of the Factory Acts, an undue proportion of children of tender age were employed in the worsted manufacture, but since those wholesome laws came into operation, the employment of the adult labourers of both sexes has become very marked; of the whole number of persons employed in the worsted factories of England, in the year 1838, one fourth part were children under thirteen years of age. The difference in this respect between the returns of 1838 and 1856 is very striking; in the latter year the children under thirteen years of age are only about one-eighth of the whole number of persons employed.\* By far the largest increase per cent. in the number of hands, is in adult males above eighteen, thus shewing, that

\* For the United Kingdom they stood as follows per cent. :—

	1835.	1850.	1856.
Children under 13 .....	24.9	12.5	12.7
Males between 13 and 18..	13.1	9.6	8.1
Females above 13 .....	51.3	58.8	58.6
Males above 18 .....	10.7	19.1	20.6

more and more, there is a tendency to employ adult labour, especially of men ; such a result is, to some extent, owing to the cessation of hand combing as one of our great staple industries, and the declining demand for hand-loom labour, and from these sources the mill hands are recruited.

With the rapid increase of the worsted manufacture our foreign shipments of both pure worsted and mixed stuffs have not, on the whole, been in proportion, as the ensuing tables demonstrate. It will be perceived, stuffs are ranked under two heads, according to a new classification adopted by the Board of Trade.\*

A few results deduced from these tables may be here noticed. For instance, it will be observed, that a great portion of our worsted pieces are sent to Germany, Holland, and Belgium. The largest single customer for them is the United States, whither also are forwarded more than one half of our mixed stuffs exported. Italy also purchases largely of all descriptions of our goods ; so do our North-American Colonies, and likewise the South-American Communities. The greatest falling off in the demand for stuffs is in that of Australia. The export to the East-Indies and China has also of late years lessened, especially to the latter country. The last of these tables also affords data to judge of the value per piece and yard of the stuffs purchased by the respective countries. Thus, for Germany, the pieces of worsted goods are worth about twenty-seven shillings each, and the mixed goods one shilling a yard ; whilst for the United States the former are only valued at about twenty-two shillings each, and the latter at eightpence a yard. It will be remarked that the stuffs shipped to France are at high rates. For the sake of uniformity with the tables previously inserted, and for readier comparison, the following tables have been digested from those of the Board of Trade.

\* From inquiries at the Board of Trade, I find that flannels, blankets, and carpeting are most incongruously classed among "mixed stuffs." Now these, as understood in the worsted trade, include stuffs where the warp is of cotton or silk, and the weft of worsted. Carpeting is partly of worsted, and may lay claim to be of this class, but the other two have no affinity thereto. But, as comparatively few flannels and blankets are exported, their inclusion does not *materially* affect the amount of export.



## EXPORT OF WORSTED AND MIXED STUFFS.

	1853.		1854.		1855.	
	WORSTED STUFFS.	MIXED STUFFS.	WORSTED STUFFS.	MIXED STUFFS.	WORSTED STUFFS.	MIXED STUFFS.
	Pieces.	Yards.	Pieces.	Yards.	Pieces.	Yards.
Russia ..	6,049	33,368	..	..	..	..
Sweden ..	23,889	64,669	41,761	67,388	53,077	..
Norway ..	12,764	130,501	24,881	177,107	29,650	126,307
Denmark ..	3,836	121,817	8,240	216,148	12,997	188,879
Germany..	404,521	3,214,507	403,982	4,057,584	485,834	3,165,071
Holland ..	173,251	1,763,061	168,856	1,326,412	157,969	1,098,823
Belgium ..	60,646	977,250	71,854	948,238	97,337	1,166,859
France ..	19,431	805,687	20,782	1,062,190	50,721	974,093
Portugal, A- zores, & Ma- deira.. ..	32,978	598,459	20,407	313,065	24,270	530,510
Spain & the Canaries ..	35,283	256,408	17,986	251,370	27,054	436,729
Gibraltar ..	25,888	440,203	18,869	475,780	28,191	319,474
Italy ..	92,727	3,706,256	57,817	3,976,500	75,969	4,219,888
Malta .. ..	3,728	119,380	2,408	134,667	6,376	263,945
Turkey & the Levant ..	30,373	314,716	18,556	446,758	30,656	750,084
Channel Islds	2,950	..	12,100	..	8,588	..
East Indies..	38,065	563,015	30,279	882,183	20,965	634,629
China .. ..	63,955	..	44,640	..	23,411	..
New Holland	216,283	3,876,370	132,960	2,179,233	41,117	354,455
C. of G. Hope and other parts of S. Africa ..	28,084	344,685	21,879	219,176	20,965	228,515
British N. American Colonies }	218,280	2,209,128	210,265	2,357,156	96,683	1,327,903
British West Indies .. }	16,115	248,562	16,674	211,431	18,389	186,114
U. States of America.. }	617,796	3,371,276	450,268	2,551,956	399,683	2,575,260
Foreign W. Indies .. }	17,583	148,011	13,448	127,722	9,599	55,443
Brazil .. ..	68,570	1,402,946	54,315	1,038,194	61,567	1,354,875
Mexico & the States of S. America .. }	94,889	3,846,101	108,213	3,797,405	99,758	3,207,928
Other countries	20,730	368,060	25,883	235,921	19,796	472,927
Totals ..	2,328,664	59,265,922	1,997,323	50,021,192	1,901,622	46,816,057

EXPORT OF WORSTED AND MIXED STUFFS IN THE YEAR 1856,  
AND THEIR DECLARED VALUE.

	WORSTED STUFFS.		MIXED STUFFS.	
	Pieces.	Value £	Yards.	Value £
Russia .. .. .	3,696	7,291	53,666	2,839
Sweden .. .. .	44,105	52,956	42,361	2,092
Norway.. .. .	23,498	29,979	204,807	13,626
Denmark .. .. .	21,198	28,047	261,577	16,012
Germany .. .. .	485,653	643,876	3,378,220	160,298
Holland .. .. .	162,153	205,157	1,065,737	52,399
Belgium .. .. .	85,947	115,019	741,396	37,653
France .. .. .	24,650	35,094	1,138,730	45,252
Portugal, Azores, } and Madeira .. }	18,574	24,834	442,967	19,959
Spain and the } Canaries .. }	33,940	51,016	815,983	42,407
Gibraltar .. .. .	27,341	36,403	376,491	17,786
Italy .. .. .	86,043	102,340	5,391,373	194,078
Malta .. .. .	7,851	10,725	175,150	7,173
Greece & Ionian Islds	6,364	7,756	271,722	10,427
Turkey and the } Levant . }	32,288	37,527	545,411	23,391
Channel Islands ..	5,544	9,284	..	..
East Indies ..	45,765	82,297	624,996	26,062
China .. .. .	56,563	103,769	9,000	320
Australia or New } Holland .. }	68,631	92,563	706,061	32,660
Cape of Good } Hope and other } parts of South } Africa .. .. }	29,222	42,455	381,942	15,728
British N. Ameri- } can Colonies .. }	122,713	162,871	1,494,683	55,393
British West Indies	18,332	23,945	206,093	7,788
United States of } America .. }	623,370	699,359	27371825	898,207
Foreign West Indies	16,142	24,042	162,298	7,307
Brazil .. .. .	64,390	83,726	1,737,407	77,616
Mexico, Central } America and the } States of South } America .. }	88,371	96,734	2,875,189	125,359
Other Countries* ..	16,746	24,476	307,095	12,426
Totals .. .. .	2,219,090	2,833,541	50,782,180	1,904,258

\* Mauritius, Java, Phillippine Islands, and South Sea Islands.

One of the most marvellous developments of the worsted industry, is the increasing extent, year by year, of the export of worsted yarn. It will be remembered that this branch may be said to have arisen in the year 1825; since then it has gradually increased, and has now become a large and important item of commerce, tending when the home market is slack to keep up prices, and maintain the hands at work. Still much loss, as in a previous page observed, is suffered in our not weaving up this yarn. Underneath, the table of the quantity and value of the woollen and worsted yarns shipped abroad, will, with that exhibited at page 492, afford a view of the expansion of our yarn trade at once astonishing and gratifying. In consequence of the imperfect classification adopted at the Custom House, worsted yarn is not distinguished from that of woollen, but the latter is comparatively a small item.

YEAR.	QUANTITY.	DECLARED VALUE.	YEAR.	QUANTITY.	DECLARED VALUE.
	lbs.	£		lbs.	£
1842	5,962,401	637,305	1850	13,773,225	1,451,642
1843	7,410,313	742,888	1851	14,670,850	1,484,544
1844	8,271,906	958,217	1852	14,217,952	1,430,140
1845	9,405,928	1,066,925	1853	13,922,720	1,454,457
1846	8,630,608	908,270	1854	15,721,968	1,557,459
1847	10,065,231	1,001,364	1855	20,400,240	2,024,060
1848	8,429,152	776,975	1856	27,348,048	2,888,422
1849	11,773,020	1,090,223			

By far the larger portion of this yarn is forwarded to Germany and Holland. Previous to the war Russia was a considerable customer in this article, and the trade in that direction is again revived. The United States also take a considerable quantity, and to France too, much of this article is shipped.\* (See table in Appendix.) On the next page will be found the prices of warp yarn (for twenty years) a sufficient index for other descriptions. Upon referring to the Appendix a table will be found of the imports of wool, and also a valuable one of the prices of Lincolnshire wool for nearly one hundred years past. This description of fleece represents the best of any one quality, English combing wool,

\* The yarn shipped to France is chiefly Mohair yarn, spun in the Bradford district.



and therefore forms a fair standard of the rates which have been obtained during a long term of years.

PRICE PER POUND OF WARP YARN (21s) FOR TWENTY YEARS.

YEAR.	PER POUND.	YEAR.	PER POUND.
	s. d.		s. d.
1822	2 4	1838	2 3½
1823	2 4	1839	2 5
1824	2 3	1840	2 3
1825	3 0	1841	2 2½
1826	2 3	1842	1 10
1827	2 1	1843	1 9
1828	1 11	1844	2 2
1829	1 10	1845	2 0
1830	1 9	1846	1 11
1831	2 1	1847	1 10
1832	2 0	1848	1 8
1833	2 9	1849	1 10
1834	2 9	1850	2 2
1835	2 7	1851	1 11
1836	2 11	1852	1 11½
1837	2 9	1853	2 4

It will be expected that some estimate should be produced of the present value of the worsted manufacture. Before proceeding to do so, it will be well to make a deduction as to the weight of wool consumed in it, and it will afford an instructive standard of comparison, to estimate first the probable quantity used in every branch of manufacture throughout the kingdom.

It is calculated that England possesses about.. ..	27,000,000 sheep.*
Scotland according to the Agricultural Statistics of 1854	4,787,285 „
Ireland in 1853, had .. .. .	3,142,616 „
	<hr/> 34,929,891 <hr/>

Professor Low considers that allowing for the deficient weight of the wool of slaughtered sheep and of lambs, the fleece will average 4½ pounds, giving as the total annual

\* France contains, according to Mons. Lavergne (in his recent work, “ Rural Economy of England, &c.,”) about 35,000,000 of sheep, about the same number as in the United Kingdom; but the weight of the English fleece is very much greater than that of the French one.

produce of our wool 157,500,000 pounds,\* which at 1s. 6d. a pound amounts in value to £11,812,500. To the above stated quantity of British wool grown, must be added the quantity imported, which last year (1856) amounted to 113,236,899 pounds. Then deduct 26,597,809 pounds of colonial and foreign wools, and 14,378,774 pounds of British wool exported, and there remains 229,760,316 pounds as the net quantity of wool consumed in the kingdom.

How much of this is worked up in the worsted manufacture of England? Of course to this question nothing beyond an approximation to a correct answer can be offered; but probably the following is the best mode of obtaining anything like a solution, from the data we possess. There are, according to the last return of factories 1,298,326 spindles; and spinners calculate that, at the lowest, a frame of 120 spindles will produce 35 gross of yarn of average qualities, namely, from 30s. to 40s—say 36s, a common quality.† It is also estimated that it will require about 5 pounds of combed wool (technically termed ‘top’) to produce a gross of yarn; and that a stone (16lbs.) of sorted wool will yield 11lbs. of ‘top.’‡ These data give 79,764,140 pounds of yarn yearly, which will require 99,705,175 pounds of combed wool, nearly one-half of all the wool consumed in the kingdom for whatever purpose, whether for worsteds or woollens, including blankets and other heavy coarse goods, because it must be remembered that much more than the above-mentioned quantity passes through the worsted processes, for more than one-fourth in weight is either lost in washing out

\* This, according to eminent judges, is a very low calculation. Wm. Cheesebrough, Esq., woolstapler, Bradford, an excellent authority on such a question, considers that four and a-half pounds a fleece (including skin wool,) is much too low an average for the fleece throughout the United Kingdom: therefore no objection on the score of exaggeration can be taken to the estimate in the text.

† In finer qualities of yarn the same quantity cannot be spun in a week as in 36s., but for the finest yarn the dead spindle is mostly used, which makes something like double the number of revolutions an hour to what the common spindle does; therefore with this increase, the production of all kinds of yarn may be set down at thirty-five gross a week.

‡ Lincolnshire, Nottinghamshire, and Yorkshire wools will yield twelve pounds of top out of every sixteen pounds of fleece wool; South-Down and other short-fibred wool, eleven pounds of top; and Australian wool, nine pounds; so that eleven pounds seems a fair average.

the grease and dirt, or combed out as too short in the fibre for making stuffs, and sold to the woollen manufacturer.

What is the yearly value of worsted manufactures? This may probably be answered as follows:—

85,000,000 pounds of English combing wool, sorted and washed at 1s. 9d. a pound* .. .. .	} 7,438,500
15,000,000 pounds of colonial and foreign combing wool sorted and washed at 2s. 8d. a pound .. .. .	} 2,000,000
Cotton warps used in the manufacture, silk warps and weft, dye-wares, soap, oil, &c. .. .. .	} 1,700,000
Wages paid to 86,690 persons employed in factories .. ..	1,861,500
Wages of sorters, combers, hand-loom weavers, dyers, &c. ..	1,200,000
Rent, &c., of mills, wear and tear of machinery, warehouse rent, &c., interest of capital, and profits .. .. .	} 3,800,000
	<hr/> £18,000,000

Which may be thus distributed:—

West-Riding of Yorkshire—goods .. .. .	10,600,000
Ditto ditto yarn for export, and sent to Glasgow, Norwich, Manchester, &c. .. .. .	} 3,100,000
Lancashire—Cobourgs, Mousselines-de-laine, &c. .. ..	2,000,000
Norwich goods, Devonshire long ells, carpets, &c. .. ..	1,500,000
Leicestershire worsted hosiery .. .. .	800,000
	<hr/> £18,000,000

It will be quickly observed that whilst in former years, the value of the manufactured goods was three and four times that of the raw material, it is now only about doubled. This arises partly from the present excessive price of wool; but of late years the cost of manufacture has much lessened from the use of combing machines, and the great improvements in the processes of spinning and weaving, &c.

Great as the value of worsted manufactures undoubtedly is, its relative importance is much enhanced when we remember that nearly five sixths of the raw material is the produce of our own soil, so that we reap the benefit of both the material and the labour bestowed upon it. Not so in the cotton manufacture, where the material has to be bought from foreigners.

Having now brought to a conclusion the general history of the manufacture, let us for a moment glance at its course. We trace it at first like some small mountain rill, the parent

\* It is estimated that 100,000,000 pounds of *combed* wool is required to feed the spindles, but here it is taken as *uncombed*, which thus leaves out the value of the cost of combing.



of a mighty stream, to near its remote and obscure sources ; we see it receive many tributaries, widen and enlarge its bounds, till at last it becomes a noble navigable river, overspread with fleets, ready to convey the blessings of trade and commerce, not only to its own land, but to the uttermost parts of the earth. Such is not an inapt similitude of the worsted manufacture in England. It probably took its rise here in the earliest and most obscure ages, long before the coming in of the Conqueror ; it unquestionably existed here six hundred years ago, and for five centuries has ranked as one of our great staple manufactures, cherished by kings and Parliament, and jealously prized and guarded by the people. During the middle ages it formed the grand source of the wealth and power of the populous and wealthy city of Norwich where it was chiefly carried on, and from time to time received Flemish and French tributaries. But after it entered Yorkshire, it may indeed be likened to a river hastening to the sea, and progressively enlarging its borders. Already it has become one of the largest and most promising textile manufactures of the world, and so rapidly has it increased, so great and inexhaustible is its power of adaptation, that nothing seems to obstruct the enlargement of its boundaries except the limited supply of material. Its wool is brought from every quarter of the globe ; cotton, silk, linen, Alpaca and Mohair, with which its “cunning workmen” give diversity of texture and shade, have been enlisted into its service, but still the consumption of material has overtaken the supply, and threatens to limit somewhat its giant growth. Such, however, is the industry and skill of its operatives, the energy, enterprise and judgment of its manufacturers and merchants ; such its natural capability of extension, and the perfection of its machinery, and as the result, such is the cheapness, beauty and variety of its textures, (combining the best points of both the cotton and silk manufactures) that it seems destined to furnish female dress for the whole of the civilized globe, alike suitable for all climes, whether cold or hot, and for all classes whether grave or gay.

Truly may it be said, and with emphasis,

“*Spem bonam certamque domum reporto.*”

## CHAPTER XIII.

## ON THE CONDITION OF WORSTED OPERATIVES.

Error which prevails in treating the Factory Question.—Subject divided into Three Heads: the Physical, Moral, and Intellectual State of the Worsted Operatives.—Physical Condition of the Woolsorter, Woolcomber, Spinner, Power-Loom, and Hand-Loom Weaver.—Opinion of the Factory Inspectors on the Healthiness of Factory Labour.—Rate of Mortality in Bradford, Halifax, &c.—Moral Condition of the Worsted Districts.—Attendance at Places of Worship.—Criminal Reports.—Illegitimate Children.—State of Education in Worsted Districts very defective.—Great Number of Marksmen there.—The Character of the Woolsorter, Woolcomber, and Hand-Loom Weaver, &c.—Large Number of Benefit Societies, and Small Investments in Bradford.—Conclusion.

PARAMOUNT to all considerations of wealth arising from any manufacture, must be regarded the social condition of the working classes engaged therein, considered in a sanatory, moral, or intellectual point of view, for the superstructure of society cannot be safe if its very foundation, the base of the pyramid, be unsound. Hence the momentous question which has of late years been violently agitated, whether the factory system has, in itself, a direct tendency to deteriorate, physically, morally, or mentally, the workpeople engaged therein. In treating of this social problem, it is imperative to arrive at a just solution, to altogether separate it from the admitted fact, that crowded cities and towns are less healthy, less moral, than the country. Not a few, even of those who have written with great force and intelligence on the subject of factory labour, have contrasted the rural population with that of the manufacturing town, to the evident disadvantage of the latter.

This is an unfair parallel, for the mortality and vices which belong to all great cities, are not necessarily concomitants of the factory system, but apply equally to any locality, or trade, where large numbers of people are massed together.

It is also at once conceded that factory labour is not so healthy, on the whole, as that of agriculture, nor the operatives of the former to be compared with the latter in well developed, robust bodies, healthiness, and longevity. But that concession does not intimately affect the question, for in our present artificial mode of society, most of its members are, in some manner or other, engaged in avocations reducing the physical strength, and shortening life. Take as an example the collier, the foundry-man; in fact, most of our manufacturing and trading population, are compelled to tread rugged and unhealthy paths, and cannot choose that which would conduce best to their health and happiness. Such is the condition of man, such the inevitable lot of all but a favoured few, that they must eat the bread of hard, often deleterious labour, all the days of their lives. It will, therefore be enough, if it be shown that labour in worsted factories is not necessarily more disadvantageous, more inimical to health and morality, than most of the avocations of common life. The debateable ground is thus contracted to very narrow and well-defined limits, and its bearings can therefore be better discussed.

Having premised these observations, it will be convenient to discuss the topic of the condition of the worsted operatives under three heads, namely, their physical, their moral, and their intellectual state.

PHYSICAL CONDITION :—To commence with the woolsorter, who is engaged in the first process of manufacture. Thackrah, in his Treatise on the ‘Effects of Arts, Trades, and Manufactures on Health and Longevity,’\* a work of acknowledged authority on these subjects, writes thus “Woolsorters are occasionally annoyed with dust from the lime, which in some kinds of wool is employed for separating the fleece from the

\* Mr. Thackrah was a Surgeon in extensive practice at Leeds, and had abundant opportunities of witnessing the condition of the manufacturing operatives of Yorkshire.



skin. No sensible effect is produced on the health.”\* As this writer does not adduce any other cause which operates against the health of the woolsorter in pursuing his avocations, it may be presumed he did not consider there existed any worthy of notice. The rooms in which the greater portion of woolsorting is carried on are lofty and capacious, well ventilated and comfortable. The sorter stands to his work, and if he suffer from any cause it will be from particles of dust arising more or less from all descriptions of wool; but it is certain that his occupation is a healthy one, if we may judge from his appearance, and the number of old men in his class.† His wages, ranging at present from twenty to twenty-four shillings a week,‡ have, at all times, when compared with those in other manual occupations, been high, and afforded him ample means for providing the necessaries and comforts of existence.

Next in order comes the woolcomber. His occupation has ever been considered an unwholesome one, but this arises, it seems, more from the fact of his working in close ill-ventilated

\* This ‘skin wool’ is very little used in the worsted manufacture; the wool employed therein being principally shorn, and has no lime in it.

† It is considered, by persons well informed on the subject, that the smell arising from wool is beneficial rather than otherwise.

‡ It is evident from a careful consideration of facts, that the condition of the worsted operatives has improved during the last sixty years. In the year 1797, woolsorters and combers earned about twelve shillings a week, hand-spinners four shillings, and weavers about eight or nine shillings. Then the prices of provisions were in Bradford:—

Oatmeal	..	..	..	..	2	8	} the stone of 16lbs.
Flour	..	..	..	..	3	6	
Potatoes	..	..	..	..	0	9	
Butter	..	..	..	..	0	11½	} the lb, of 18oz.
Beef	..	..	..	..	8	0	
Mutton	..	..	..	..	0	5½	} lb. of 16oz.
Veal	..	..	..	..	0	5	
Bacon	..	..	..	..	0	8	
Pork	..	..	..	..	0	6	
New Milk	..	..	..	..	0	2	the quart.

If we look at the wages now paid to the various operatives employed in the worsted manufacture, we shall find that a larger amount of the necessaries and comforts of life can be purchased with them, than with the wages of sixty years ago. So in that respect, the condition of the worsted operative has not deteriorated.

rooms than from the mere nature of the employment. Thackrah observes on this class of workpeople, "Woolcombers work in apartments which, from the fire employed to heat the combs, are kept at the temperature of 80. The fires are made of charcoal. A light dust arises from the wool. The lungs suffer so much that many persons cannot pursue the employment. The men, however, whom we found in the rooms appeared quite healthy, and we were informed that out of one hundred individuals only two or three were absent from illness. The heat of the apartments does not appear to shorten life. We saw at work men of sixty-four, sixty-eight, and seventy years of age." Formerly his earnings were large, but of late years the condition of the woolcomber has been most lamentable. With scanty wages, insufficient to support himself and family with nourishing food; enervated by the heat and effluvium of charcoal fires; confined to noisome abodes, his life has been one of privation and misery. In the year 1845, a Committee, appointed at a numerous meeting of the woolcombers of Bradford, inquired into their condition. The Report is one of the most distressing documents that can be perused. It states that there were then upwards of ten thousand woolcombers in the town of Bradford and neighbourhood, the major part of whom were compelled to make workshops of their sleeping apartments, and to live amidst the vapours of charcoal. Unable to pay the rent for a comfortable dwelling, a large number huddled together in one apartment, and this rendered their situation still worse. That their physical well-being was neglected, the emaciated appearance of most, plainly betokened. Happily it is unnecessary further to detail the misery of this class, as the occupation has almost gone; the combing machine having, to a great extent, supplanted their labours.

From the woolcombers we pass to the worsted spinners, who are chiefly children or young persons. Since the passing of the Factory Act of 1833, their state has been wonderfully ameliorated, and especially so subsequent to the limitation of factory labour to ten hours a day.\* The employment of wors-

\* The hours are ten and a-half every working day, except Saturday, when they are seven and a-half, altogether sixty hours a week.

ted spinners, unlike that of cotton, is a healthy one, to which no complaint can be raised, except that incident to all confined occupations.\* It is observed by Thackrah that, "Spinners of worsted inhale a fine dust; but this is not in such quantity as to produce a marked effect." Under the provisions of the Factory Act, the spinning rooms are well whitewashed, and ventilated; their ordinary temperature is the moderate and healthy one of 65. The calling is a clean and active one, and secures sufficient wages to enable the spinners (mostly girls) to be well fed and clothed. According to the age and excellence of the spinner, the earnings average from four to seven shillings a week. One of the main objections urged against the factory system is the employment of persons of tender age. This is, however, an objection which will apply to the manufactures of our forefathers. (See pages 194, 270, 273, &c.) In all ages, children have been employed in labour often unsuitable to their strength. For example, in the agricultural districts gangs of them may be seen weeding in the fields during the bitter days of Winter, for nine hours a day, at two shillings a week.

Even superior to that of the spinner is the sanatory state of the power-loom weaver, whose employment ranks among the very best paid, the pleasantest, and the most healthy pursued by females.† These weavers will, if of fair ability, earn ten shillings a week, whilst a first-rate hand employed upon fine stuffs will obtain a much higher remuneration. With the exception of the noise from the machinery, there can scarcely be mentioned a disagreeable item which appertains to the labour of a power-loom weaver, in a well conducted mill. The temperature of the rooms is, like that for spinning, moderate, there is little dust, the duties are active, not fatiguing, and the hours of labour, like those of the spinners, not excessive. Most of these weavers are girls, and are as a class well

\* Since the passing of the Factory Act the change in the condition of factory operatives is wonderful. Previously, cripples among them were very common, and the mortality great, arising from the excessive hours of labour. What also now contributes to their health is the necessity for the factory children appearing at School cleanly.

† The employment of drawers and reellers is also very light and pleasant.



conducted. None are better able, from opportunities of observation, to decide on the question whether factory labour be detrimental to health, than the Factory Inspectors. Mr. Rickards declares, in one of his Reports—"That factory labour is decidedly not injurious to health and longevity, compared with other employments;" and Mr. Saunders observes "I am strongly of opinion that the effect of factory labour has been greatly exaggerated, and is not as injurious as it has been represented, or indeed so much as many occupations not under legislative control." Another excellent authority, on this subject, Mr. Baker, the Factory Inspector, lately gave a decided opinion, that labour in worsted factories, under proper regulations, and under the present system of restriction, is more favourable to longevity than even ordinary agricultural labour.

Not so flattering a picture as the above, is that of the hand-loom weaver, so far as regards wages and health. Still the employment of the hand-loom weaver seems more calculated to depress than wear out the powers of life. Hear Thackrah on the subject:—"Weavers have a confined atmosphere, and though the limbs are fully exercised the trunk is kept comparatively fixed, and the chest is not expanded. This stooping, however, is somewhat diminished by the mode of casting the shuttle with a string instead of the hand. When weaving is carried on at home, the rooms are often small, and ill ventilated. Fever is rather frequent among weavers, but other acute diseases are rare; the men, however, seldom enjoy health. Digestion is imperfect; asthma and other affections of the chest are common. They complain of the smell from the oil lamps. This no doubt annoys the lungs, but their reduction of health is attributable chiefly to the confinement. The susceptibility to fever may arise from the frequent defect of proper nourishment. The *weavers of stuffs* have low wages,\* and are often out of employ. There are more old men in the occupation of weaving than in most others."

\* See page 430 for an account of the wages of hand-loom weavers.

It thus appears that the labours of worsted operatives are not in general obnoxious to health.\* Let us now proceed to enquire into the rate of mortality in their centres of residence. It will be found on investigation, that in the towns engaged in the manufacture of worsted, the mortality is less than in those large towns where the woollen, or cotton, or other extensive manufacture, is carried on. Looking at the Registrar General's sixteenth Report, it will be observed, that in Bradford district† the mortality amounted, on the average between the years 1841-50, to 25 deaths annually out of every 1,000 persons; in that of Norwich to 24; in that of Halifax to 22; and in Keighley to 21, all which are favourable states of existence when compared with Sheffield, where the average mortality per 1,000 stood at 27, or Leeds where it ranged at 30, or Manchester where it reached to 33.‡ The mortality at Bradford is at the same rate as that in London, where manufactures are not the destructive agents, but other causes. The lowest of these rates of mortality is alarming, when contrasted with those of some agricultural districts in the North-Riding of Yorkshire; but to compare densely crowded localities, like Bradford district, with such places as Guisbrough in the North-Riding, would be obviously a fallacious process; for when viewed strictly, it is evident that the high mortality of manufacturing districts, especially the worsted ones, is chiefly attributable to those

\* I have the authority of Dr. Macturk, who, as Physician to the Bradford Infirmary and long experience, is well able to judge on this matter, to state, that the factory operatives of Bradford are not peculiarly liable to any disease beyond the other inhabitants.

† The townships in the borough of Bradford (namely Bradford, Horton, Bowling, and Manningham) constitute, along with those of the North Bierley Union, the Superintendent Registrar's district, which contained, according to the census of 1851, 181,964 souls.

‡ These can only be considered as proximate results, for Bradford and Halifax registration districts comprise a wide space of country, where the density of population is small; whereas in Leeds and Manchester districts, the density of population throughout is great. But in Bradford proper (that is the township) the mortality is low compared with other manufacturing towns, for in the year ending March, 1856, the deaths were only 1,233 out of a population of 60,000, being about twenty to the thousand.

causes which prevail so largely in densely populated towns. Manufacturing towns must be compared with manufacturing towns; cities with cities, to arrive at any worthy conclusion. The comparative high rate of mortality in Bradford has arisen mainly from overcrowding, the vices incident to living in large cities, and above all, to the want of proper sanatory administration for cleansing the town. What can be effected by the last particular, we may, in some degree, conclude from the subjoined statement, where it is seen that during the last five years from carrying into effect sanatory regulations, the mortality has remarkably decreased. The total number of deaths in the Borough of Bradford in each of the five years ending 31st March, was in—

1852	..	..	2,892
1853	..	..	2,980
1854	..	..	3,202
1855	..	..	2,738
1856	..	..	2,563

The estimated population of the Borough of Bradford in the year 1856 is 120,000, giving a mortality of only about 21 in the 1,000.

Such a statement is sufficient to convince the most sceptical as to the effect which cleanliness and order have upon the public health. Bradford naturally possesses a pure and salubrious air, and it only requires a strict administration of the sanatory and police laws to make it worthy of comparison with any place of its size in England. With all the great improvements made since Mr. Smith, of Deanston, one of the Commissioners for inquiring into the state of large towns, made his Report, the state of Bradford, with its polluted Canal running down its side like an immense open sewer, is very much to be deplored, and to that state is, in great part, to be attributed the high mortality which prevails there. It may, most boldly, be asserted, that not to the labours of the worsted factory can the high rate of mortality at Bradford be charged, for they are undoubtedly the lightest and healthiest in the whole range of large manufacturing industries. The spinning and weaving rooms in our worsted



factories are mostly capacious and well ventilated, kept by strict overlooking, clean and whitewashed; the inmates are not exposed to the injurious vicissitudes of our variable climate, nor to an obnoxious rate of temperature; their hours of labour are not immoderate, but the contrary, being on an average not more than an hour a day over those of females employed in the laborious occupations of husbandry; so that it cannot be fairly asserted that factory labour, of itself, is more injurious to health than the ordinary occupations of a life of labour.

MORAL CONDITION —Perhaps the best test of the moral condition of any people is their attendance at places of worship, for such a test shows a disciplined mind; and the great moral truths there inculcated cannot fail, upon most, to produce a very beneficial effect—to enlarge and ennoble the heart, and improve the understanding. Following the Census Returns as our guide, it will be found that the attendance in Bradford parish was very large on Census Sunday. Out of a population of 181,964 souls, there attended in 159 churches and chapels, containing 72,360 sittings, 36,342 persons in the morning; 31,882 in the afternoon; and 27,714 in the evening. In Halifax the rate was about the same as Bradford, but in Norwich not so high. Throughout the worsted districts the proportion of people attending worship stood about the same average as that in the whole of the West-Riding. According to the means of accommodation, the proportion of attendance was very much higher than in London, or the average of England; and this is the best standard, for in the one case there is ample room for attendance, and in the other it is restricted by the insufficiency of the sittings. Enough has thus been shown to suffice in proving that the attendance at places of worship on Sundays is a fair average one in the worsted districts. It is well known that factory girls form an important portion of the religious congregations in Bradford and other towns of the West-Riding.

Another but less satisfactory criterion of the moral condition of society, is the number of offenders in proportion

to the mass of the population, and in this respect the returns for Bradford, Halifax, Keighley, and Bingley, as well as Norwich, are low, compared with similar places. Taking Bradford as the representative of the worsted factory system, it can be satisfactorily shown that the offences in it are not large in number when contrasted with other manufacturing towns of a like size; and that the worsted operatives are, at all events, not worse than their neighbours, but probably better.\* From the Report of Mr. Leveratt, the Superintending Constable for the Borough of Bradford, issued 30th of September, 1856, the following tabular statement is extracted.

Table showing a comparative view of the number of offenders brought before the Bradford Borough Magistrates during the last eight years:—

YEAR.	FOR FELONY.	FOR ASSAULTS AND DRUNKENNESS.	FOR OTHER OFFENCES.	TOTAL.
1848	268	411	101	780
1849	210	535	192	937
1850	199	301	207	707
1851	243	287	182	712
1852	262	276	220	758
1853	239	228	185	652
1854	379	254	285	918
1855	297	197	281	775
1856	337	187	249	773

The deduction from this document is a very pleasing one, namely, that even as the population of Bradford advances, offences are less numerous. Attention must be drawn to the fact, that in the years when trade has been depressed, felonies have abounded, of which the main portion are offences against property. For example: against the year 1854, we find enumerated 379 felonies. On considering that the Borough

\* I have before me the Criminal Returns for Manchester, Birmingham, and Leeds, and compared with those places, Bradford, in proportion to the population, stands upon favourable ground.

of Bradford is estimated to contain 120,000 souls, the proportion of offences committed does not appear disproportionate when compared with other dense populations. Though, in itself, the fact of so large a number of offences, is a painful one, it does not, however, belong to the factory system, but is inherent in the constitution of all great towns. It is satisfactory to learn that out of the 773 offences committed during the present year in Bradford, only 8 are attributed to woolsorters, 3 to overlookers, and, unexpected fact! only 5 to the mill-girls. As the latter form an enormous multitude,\* the statement is flattering to their honesty and good behaviour. But when we turn to the other side of the picture, it will be found that 103 mill-boys were during the year brought before the magistrates, namely, 56 for felony, 14 for pocket-picking, 21 as vagrants, and 12 for other offences. On glancing at the above table it is apparent that assaults and drunkenness form the main item of offences in Bradford, and most of the former arise out of the latter.

Much has been said and written respecting the want of chastity exhibited by the mill-girls. Unquestionably there are large numbers of them who are on this score open to censure; but the charge is unfounded if applied to the worsted mill girls as a class.† The respectable portion of the masters are now becoming more aware of the heavy responsibility which attaches to them, and no longer seem careless of the character of their mill-hands, or of the overlookers who possess so much influence over them. There is no reason for supposing that with careful supervision by the masters, the worsted factory operatives, especially the female portion of them, would not become among the best ordered in the community.

\* According to the census of 1851 there were employed in the Borough of Bradford, in the worsted manufacture, 16,881 males, and 16,716 females.

† In the "Woollen, Worsted, and Cotton Journal" (a periodical ably edited by Mr. Collinson) for August, 1853, there is an article on the moral tendency of factory labour, which contains the following passage:—"The 15,000 female factory operatives employed in Bradford and the neighbourhood, form as moral a portion of the population as can be found in any town in the kingdom. Gross depravity among them is the exception, not the rule." The writer assumes that 2,500 of these operatives are married.



The factory girl of Bradford is naturally a good subject for amelioration. She is cleanly, prone to smart dressing, and astonishes the stranger on Sundays or holidays by the respectability of her appearance. That licentiousness does not exist to any alarming extent among the female worsted operatives seems obvious from the small number of illegitimate children born in Bradford, compared with other districts. In this respect Bradford, stands upon fair ground, for whilst the number of illegitimate children born in Easingwold Union in the year 1849, numbered 1 to every 270 persons, in Bradford they only numbered 1 in 380. Since that year I have no means of comparing the results, but one year is as good as another for showing that the factory girls are not more unchaste than the females resident in an agricultural district. As corroborative of this view, the statements contained in the Registrar General's sixteenth Report may be referred to, namely, that whilst illegitimate children were in the West-Riding only seven per cent. of the total number of births, they were in the purely agricultural districts of Hereford and Salop in the proportion of nine per cent.; in the North-Riding of Yorkshire and in Westmoreland eight per cent.; and in Cumberland the extraordinary rate of eleven per cent. It must also be remarked that married female operatives in worsted factories have not been found to be less prolific than those engaged in agricultural labours.\*

To the often repeated allegation, that females employed in factories neglect their homes and families, that they are deficient in the practice of cookery, domestic economy, and needlework, it may be counterstated that such is also the condition of females engaged in agricultural labours, whose homes are, in like manner, left uncared for whilst working in the fields. Wherever the married woman has to pursue any avocation to earn her bread, so far will her domestic duties be neglected. The factory operative, however, is in cleanliness and domestic management vastly superior to the female labourers of Wilts, Devon, and Dorset.

\* The authority for this statement is Dr. Taylor on Factory Labour, who quotes a Report of the Poor Law Commissioners.

INTELLECTUAL STATE:—Among the many benefits which the factory operatives have derived from the Factory Acts, none are of more importance than the education clauses, which compel the attendance of the children at school. Contrary to the expectations of many, the operation of these compulsory measures has been highly satisfactory. It cannot be concealed that a very large number of parents who send their children to the mill at an early age, are totally careless of their education, and intent only on the gains derived from their labour, so that if left to the parents' care the children would be destitute of the means of instruction. Since, the publication of Lord Kerry's Education Returns, in 1835, education has been largely extended in the worsted districts. Still they are, compared with the average of England, placed in this respect in a disadvantageous light. On perusing Mr. Mann's Report on the Census of 1851, it will be seen, that in the year 1851 there were in the district comprised in Bradford Poor Law Union, 254 day schools, where 18,225 scholars were taught; and 161 Sunday schools, (most excellent and powerful auxiliaries in moral and educational training) attended by 32,645 scholars. Halifax district contained 239 day schools with 14,970 scholars, and 136 Sunday schools with 23,644 boys and girls. Thus, in Bradford, were educated ten per cent., and in Halifax twelve per cent. of day scholars out of the population; whilst for the whole of the West-Riding there was twelve per cent., in the North-Riding thirteen per cent., and in Middlesex ten per cent. of day scholars to the population: the average for all England being twelve per cent. There is therefore yet a large gap to be filled up before this reproach to the worsted industries of Yorkshire be removed. In this reproach, however, the factory operatives cannot be comprised, because the factory children are compelled to attend school, and from these are afterwards drafted a large number of the weavers. The deficiency above noted in school attendance at Bradford, is partly owing to the large number of Irish and others, whose children are not employed in factory labour, and do not resort to any school. But to all acquainted with worsted

factory operatives, it is notorious that they are very imperfectly educated, and that gross ignorance widely prevails among them. The following facts corroborate this view: The number of persons who can write in Bradford and Halifax appears to be fewer, according to the population, than in either Manchester or Leeds, from the fact, that according to the number of marriages which took place there, more of the parties to the ceremony could not write. In the Bradford registration district, out of 2,024 marriages in the year 1853, there were 719 cases where both parties signed the marriage register with marks; and 782 cases where one of them signed it. This is an alarming fact, shewing that at three-fourths of the marriages either one or both of the parties signed with marks. For Halifax the statement appears worse, namely, out of 1,272 marriages, 465 of both parties signed with marks, and 459 where one of them so signed. Keighley stands in the same black list. Leeds and Manchester, in this respect, presented very favourable contrasts. Much of the deficiency in writing attainments observed in Bradford is no doubt owing to the large number of miners abounding there, who are among the worst educated in the kingdom. But it is to be feared that among the factory operatives is to be found one of the causes of this extensive want of education in writing. The other classes of worsted operatives must be acquitted in this respect. Compared with the labouring portion of the population of the rural districts, their intelligence and fund of knowledge is remarkable. Some fourteen years ago I wrote the following paragraph, which is still applicable to the intellectual condition of the operatives of Bradford:—"The lower class is, as usual in manufacturing towns, an intelligent portion of the community. The politics of the day form the great topic of discussion among them; and it is no unusual incident to find persons who are better acquainted with the acts of the ministry, and more likely to be able to repeat the items of public expenditure, or of the civil list, than the decalogue. I write this not disparagingly."



As before stated the operatives connected with the worsted manufacture are classed in four divisions :—the woolsorter, comber, hand-loom weaver, and the workpeople employed in spinning and weaving by machinery. The first comprehends a large number of men who are, as a body, a well educated, intelligent, and industrious class, performing the duties of life satisfactorily, have few dissensions with their masters, and are intent on providing for the exigencies of sickness and old age ; the second, a well informed class have been memorable for strikes and general improvidence, and strongly impregnated with political doctrines of the democratic school. Much, however, of their faults is attributable to the harassing and enfeebling nature of their employment, their ill-ventilated, incommodious, and unhealthy dwellings. But their occupation, except for particular sorts of wool, has been displaced by machinery, and they are fast dwindling into insignificance, and are threatened with extinction. The hand-loom weaver was, taken in all the features of his life, a most praiseworthy member of society. Reared on the mountain side upon the plainest food, he pursued his labours from early dawn to close of day, even in the Summer tide ; his partner and family assisted him in his labours, and their joint labours, for very many years, were barely sufficient to support them with the ordinary necessities of life, for few of its comforts fell to his lot. Still he toiled on, uncomplainingly, whilst his task master, and the power-loom conspired to lessen his pittance. If there be one sight more precious than another in the eyes of the Almighty, it is that of the honest, soberminded man, bowing himself uncomplainingly to the bitter yoke, for the sake of bringing up his family in a moral and respectable manner. Although the labours of the hand-loom weaver may appear to a casual, inconsiderate observer, light, yet, when followed for twelve or even fourteen hours, they are peculiarly exhausting and monotonous. He has often by sheer industry and perseverance raised himself from his humble position to that of master manufacturer. Indeed, a large number of that class in the parishes of Bradford, Halifax, and Keighley, have to their

honour, sprung from this humble walk of life. Having from the nature of their labours, much time for abstraction of thought, and study, whilst plying their daily task, with book on the loom side, a large number have become excellent scholars, especially mathematicians, some of whom would not have disgraced the Lucasian Professorship. But like the woolcomber, the hand-loom weaver is fast disappearing except for fancy goods woven chiefly in Huddersfield and Manchester districts. He is still to be found in diminished numbers in the moorlands, chiefly employed on fancy goods, for which his great skill in the textile art eminently fits him. The reading portion of the females who labour in factories constitute the chief support of circulating libraries in the worsted localities. They read with avidity romances and novels, and are great admirers of the trash which forms the staple of much of the periodical press.

Prudence is peculiarly one of the virtues which belongs to a highly civilized people, for all barbarous people, as a rule, provide not for the contingencies of sickness, accident, or old age. If the habit of postponing present enjoyment for a future good, favourably characterise a people, then assuredly the operatives of Bradford stand high, for there is not, it is believed, any town of its size in the kingdom, where so many possess dwellings of their own. The depositors in Savings Banks are in proportion to the population also very numerous. Previous to the depression of trade in 1847, there were few depositors among the factory hands, but they were then taught a bitter lesson, and have since been large depositors.\* The political economist will perhaps consider it a set-off against the prudence of the worsted operatives, when he is informed, that early marriages are exceedingly prevalent among this class—the natural product of good and regular wages. To every person conversant with Bradford, it is notorious that it contains an immense number of small

\* The authority for these statements is Mr. Haigh, the Actuary of the Bradford Savings Bank. He states, that Messrs. Walker, of Bradford, at one time made free deposits for seven hundred of their mill hands, in order to give them the initiative in setting apart a portion of their earnings.

proprietors of houses, and that numerous Building Clubs have been instituted and successfully wound up; neither must it be forgotten, that a large number of the woolsorters and overlookers have raised themselves to the position of masters, and by their intelligence, enterprise, and integrity, added to the prosperity of Bradford.

To sum up the preceding statements:—It is undeniable that the whole of the woolsorters, and also the operatives engaged in factory labour earn good wages, and that their occupations are not destructive to life beyond the ordinary lot of labourers. Nor can it be denied, that in point of morals, the worsted operatives are not below the standard found in large manufacturing towns, and densely crowded cities. But one sad conclusion cannot be avoided, that whilst particular classes of worsted operatives are educated, a very large number of them remain in a state of ignorance, which it behoves their masters, and every person interested in the welfare of the masses of society, to remedy.\*

\* Since the preceding pages were printed, the opinion of a medical gentleman (who for a number of years has had a most extensive experience in Bradford as a certifying Surgeon under the Factory Act) has been obtained, as to the morality of the factory girls, and his opinion is very favourable. He states, that in a worsted mill where five hundred females are employed, there have not been out of this number more than three illegitimate births yearly; and that these, in most cases, have been to suitors, who have married the parties. He also states, that in Bradford the ill-behaved girls are generally only employed in the second-rate mills at inferior wages.



## CHAPTER XIV.

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WORSTED PROCESSES.

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IN this Chapter it is proposed to give a brief description of the principal processes of the worsted manufacture. These are sorting, combing, carding, drawing, roving, spinning, weaving, and dyeing.

**SORTING.** As before noticed, for making worsted stuffs, a long stapled wool, free from curl, so as to form a fine smooth and straight thread, is required. The separation of this long fibred wool from the rest of the fleece, and the assortment of the whole into various kinds, according to quality, is the province of the woolsorter. Formerly his art was extremely simple; the fleece was merely torn across the loins, the skirts stripped off, and the remainder divided into three parts. But now the fleece is sorted into very numerous qualities. Most of the worsted spinning establishments employ different terms for designating these qualities, and some make more sorts than others. Out of English combing fleeces of good pile, eight sorts of combing wool will be selected; these in a large establishment at Bradford are termed breech, one, long two, two and a half, short two, threes, fours, and fives. Also about four sorts of short wool, used in the woollen manufacture, will be separated from a fleece of long wool. The sorters stand to their work, having, in a good light, the fleece spread out before them, upon a board breast high. Owing to long practice and training, they acquire extraordinary skill, mainly by the eye, and partly by the touch, in discerning the different qualities of

wool. Of late, since the use of the combing machine has so much prevailed, the process of sorting in some few establishments for particular kinds of combing wool, has become much simpler, reverting to the ancient practice of making only three or four sorts.

COMBING. The long wool after being sorted is put into the hands of the comber, by whom, previous to being submitted to the comb, it is washed. Anciently the wool was both washed in soap and hot water, and also wrung dry by the hands. Afterwards there was added to the comber's washing vessel a kind of windlass, by means of which the wool is wrung. This implement is yet mostly used by the hand comber; but in most establishments the moisture is squeezed from the washed wool by means of its being pressed between rollers. Now, in some large worsted spinning factories, a very effective washing machine patented by Messrs. Petrie and Taylor, is employed. It is an ingenious and simple contrivance and attended by one man is capable of washing in a short time a large amount of wool. The machine in its main features consists of an iron vessel or trough to contain soft soap and hot water, into which the wool is thrown and by means of a sort of iron rakes moved briskly. The wool after being washed is drawn out of the vessel by a "porcupine" or cylinder, set with iron teeth a little crooked, and then submitted to a winnowing process which so effectually cleans and dries it that it is fitted at once for the preliminary process of the combing machines.

After the wool is washed it is fit for combing. This process until a few years since was, with slight exceptions, performed by hand labour. There is at page 249, a full description of the mode of hand combing which it is not necessary to repeat here. The origin of combing is attributed to Bishop Blaize, who flourished as Bishop of Sebasta, Cappadocia, in the second century, and suffered martyrdom by having the flesh torn from him by iron combs. On reference to the first plate in this work there will be found the delineation of a woman combing wool with one pitch combs, that is combs having only a single row of teeth. Thus it is evident that in

the middle ages, (for the figure is taken from an illustration of the fourteenth century) wool was combed with single pitch combs. Afterwards two pitch, and subsequently three pitch combs were employed; the latter being those in use up to the early part of this century. When fine descriptions of wool of shorter staple began to be used, four, five, and even six pitch combs were used, as the deep pitch of the combs better took out the knots and straightened the fibre. In combing Alpaca, combs of seven and even eight pitch are employed.

At the present time by far the larger portion of the wool worked up in the worsted branch, is combed by machinery. Previous to the wool being submitted to the combing machines, it is necessary in most of them, first to prepare it by means of what is termed a 'plucker,' an instrument which has in one form or other, been in use the greater part of this century. The main portion of the 'plucker,' consists of a pair of rollers set with spikes, somewhat bent at the end, which are fed with wool by means of an endless apron. Afterwards the plucked wool is passed through a set of three preparing machines furnished with screw gills (similar to those in Lister's combing machine) and is thus drawn into a sliver with the fibres straightened and prepared for the action of the combing machine.

The reader will expect some account of the combing machines which from time to time have been adopted in the trade. A volume would, however, be required to describe in detail the numerous complicated contrivances for combing wool which, during the last sixty years, have been patented, some of which never came into practical use; and others again are only remembered as failures after short trials. It is, therefore, merely intended to present a description of the most important of these machines, especially those which are in use at the present day, and only to describe such portion of their formation as will suffice to convey to the reader the principles upon which they act. The following outline has been prepared by a gentleman thoroughly conversant with this subject.

Till within the last few years it was a question of doubt and dispute, whether a machine could be devised so perfect as to supersede hand labour in combing wool and other fibres. Repeated attempts and successive failures, more or less complete,



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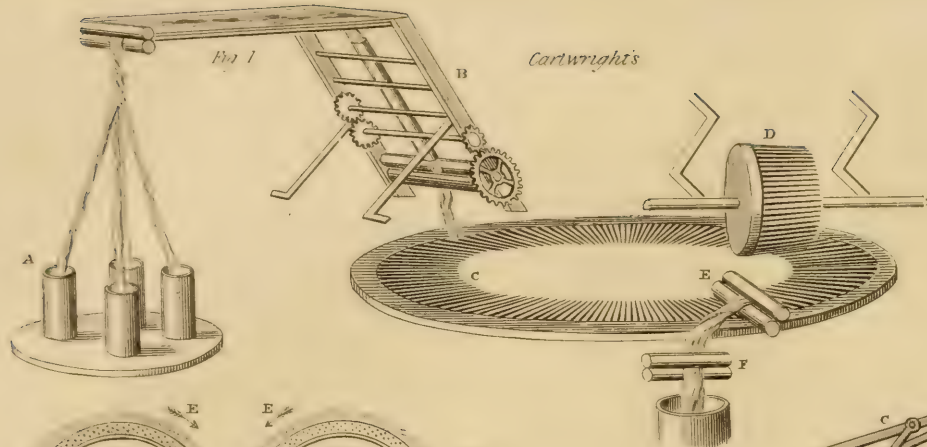


Fig. 1

Cartwright's

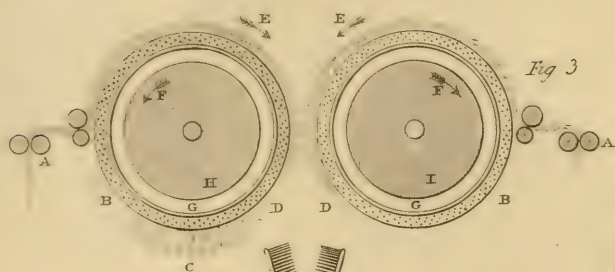


Fig. 3

Platt & Colliers

Fig. 2

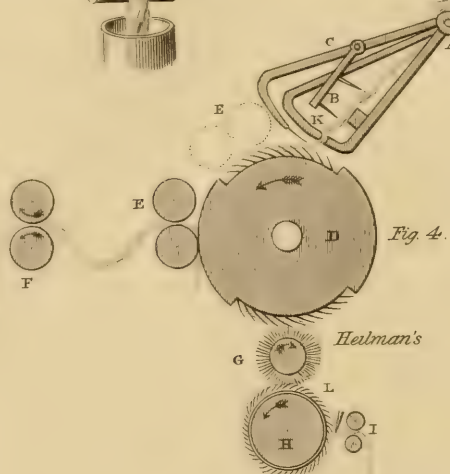


Fig. 4.

Heilmann's

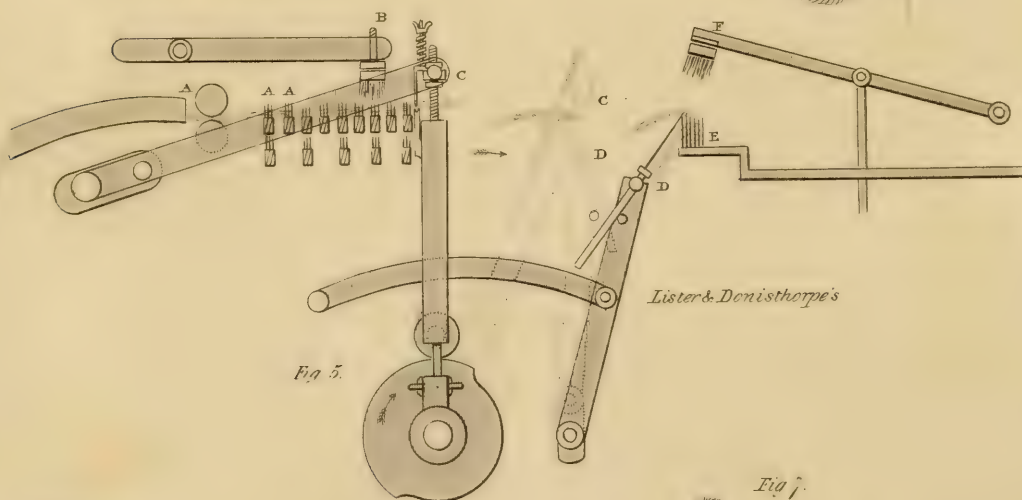


Fig. 5.

Lister & Donisthorpe's

Ireland & Co's

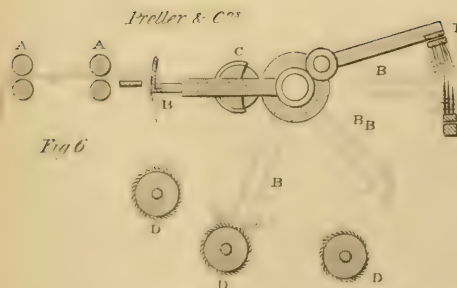


Fig. 6

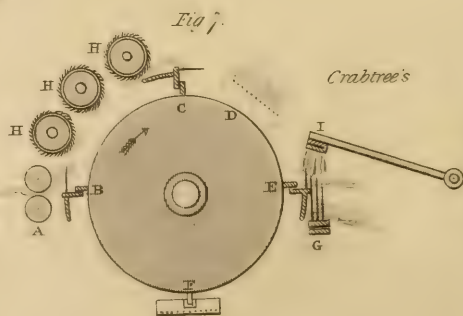
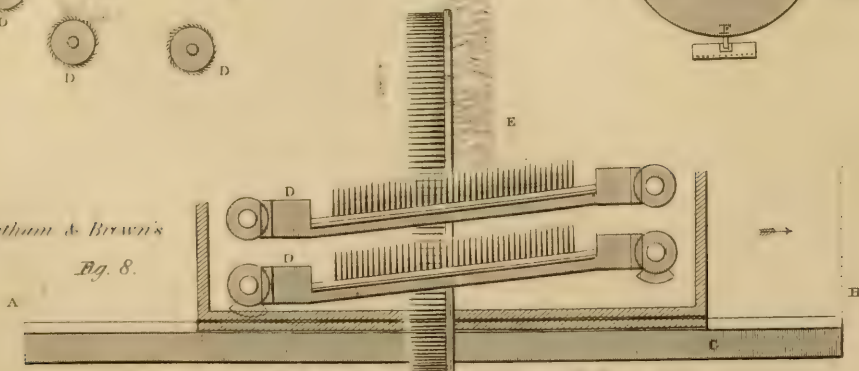


Fig. 7.

Crabtree's

Ramsbottom & Brown's

Fig. 8.



of many ingenious inventors, almost led to the conviction that this was one of the few impossibilities that our wonderfully advanced mechanical art could not achieve.

The first combing machine, of which we have any record, was invented by the Rev. Dr. Edward Cartwright, of Doncaster, in Yorkshire. He took out three patents, one on the 27th April, 1790, another on the 11th December in the same year, and again on the 17th May, 1792, when he had perfected his invention. Dr. Cartwright's chief aim appears to have been to construct a machine that should imitate the process of the hand comber as closely as possible. It is well understood that the hand comber uses two combs in working his wool; one of these combs is fixed to a wooden frame work, and the comber, having previously washed and oiled his wool, fills it upon this comb by striking, or (to use the term peculiar to the trade) "lashing" the end of the portion held in his hand into and among the teeth; he then takes the other or working comb and strikes its teeth into and draws them through the fibres which are hanging out from the holding comb, till what is called the noil, that is the filth and short fibres, has been combed out; he then gradually draws out the worked wool into a long sliver, and this completes his process, by separating the other end also from the noil with which it was charged, the latter being retained in the teeth of the holding comb.

Referring to figure 1, plate 3, we shall find that Dr. Cartwright carefully imitates these three processes; he fills the fibre out of the oscillating frame B over and into the teeth of the holding comb C, works it by means of the comb D, and then draws out the worked wool by the drawing rollers E.

The following is a description of the important parts of Cartwright's machine, (figure 1, plate 3).—A is a table supporting a number of cans, out of which the prepared wool, which has been previously washed and drawn out into continuous slivers by a preparing machine, which it is not necessary to describe, is passed through the oscillating frame B, which is governed by a crank action, and caused to pull its wool over and into the teeth of a circular comb, revolving horizontally; this comb, C, is furnished throughout its circumference with rows of teeth pointing horizontally towards the centre; as this comb slowly revolves it gradually becomes filled by a succession of tufts of wool lashed in from the frame B; the fringe of the tufts so held is carried round till it passes under the working comb D, which also traverses by a crank motion across the face of the comb C, inserting the points of its teeth into the fringe, and so combing out the noil and refuse as the comb C passes round, it brings the fringe in contact with the drawing off rollers E, which draw out the sliver of top, leaving the noil behind in the chambers of the comb; the sliver is then carried forward through the conducting rollers F into the receiving can below. It has not been thought necessary to describe the mechanical parts, but simply to show so much of the machine as will explain its principle and mode of action; and the same rule will be observed in the explanation of the other machines required in the illustration of this subject.

In describing his invention Dr. Cartwright furnishes some interesting information respecting the combing trade at the date of his patent; he says, "The magnitude of this invention, in respect of its object, and its importance to the woollen manufacture may, in some degree, be estimated by the quantity of combing wool annually grown in this island, which, according to the most approved calculations cannot be less than 300,000 to 400,000 packs; the average expence of combing which, by hand, may reasonably be laid at £800,000 to £1,000,000. That this calculation is not far from the truth, we need only recollect that the body of wool-combers is supposed to be nearly fifty thousand; amongst whom the alarm which



the introduction of this machine has occasioned is well known. Upwards of forty petitions, from various parts of the kingdom, were presented to Parliament during the course of the present Session for its suppression; and for this purpose a Bill was brought into the House of Commons by the friends of the petitioners. It was, however, rejected by a large majority."

The manufacturer of the present day, who has witnessed the almost intelligent action of the beautiful machines now at work, may feel an inclination to smile at the storm of indignation and alarm which was excited by this rude and imperfect attempt to supersede hand labour. The machine does not appear to have come very extensively into use; a millowner at Nottingham, of the name of Hawksley, adopted it, and in 1793, himself took out a patent for improvements which he made upon it. The first combing machine introduced into Bradford, which was about this time (1794) must have been either Cartwright's or Hawksley's improvement; it was set to work by the late Robert Ramsbotham, on the premises behind his house in Kirkgate. This house is now in the occupation of the Bradford Banking Company. The machine, which was worked by a horse running in a gin, does not seem to have answered the expectations of its purchaser, for after working for some time it was taken down and sent away; indeed it would appear to have been a source of loss and annoyance, as the old gentleman is said to have taken off his hat to it as it left his yard; no doubt, at the same time expressing the charitable hope that 'Big Ben,' as it was called, might prove a better servant to its new master.

The next important combing machine, in the order of time, and by far the oldest that still continues in public use, is Platt and Collier's, which was first patented in 1827. This machine consists of two circles of combs, with a pair of drawing off rollers attached to each circle. The two circles are placed at an angle to each other, as shewn in figure 2, plate 3, and with the points of the teeth of each inclining towards the teeth of the other. The side elevation of the machine (figure 3) shews the 'top' as it is being drawn off. The raw wool is first filled into one of the circles at C by hand, the drawing heads having previously been thrown out of motion, and drawn a short distance back from the circles, so as to leave room for the mass of raw wool which has been filled in to pass; the two combs are then set in motion at a high speed in the direction of the arrows E E: one comb is filled all round with unwashed wool, and the other is empty. When they first begin to revolve they are so far apart that the points of the teeth in the empty comb barely touch the end of the fringe of raw wool hanging out from the other; but by means of a screw and lever the two circles are caused to traverse slowly towards each other, till they reach the dotted lines D D, and come into the position which is called head and head. By this arrangement it will be seen that the empty comb works the wool hanging out from the other, and robs from it, at the same time gradually working deeper and robbing more freely, till when they come into the position D D each comb is equally charged with worked wool, each having worked the wool hanging out from the other. The two combs are then put out of motion and drawn away from each other, the drawing rollers are moved up and connected with the circles at A A, and the 'top' is drawn off; the circles revolving slowly in the direction of the arrows F F, which is the reverse of their motion when working the wool. The noil is slipped off by hand at B B. Both the circles are heated by steam. Since the expiration of the patent for Platt and Collier's machine, another has been taken out by the proprietors, the main improvement consists in the two circles of combs being placed at a greater angle to each other.

It is a singular circumstance that, from the date of Cartwright's patent till the year 1846, every new invention should have been directed almost exclusively to the perfecting of improvements on Cartwright's principle; for half a century a long succession of ingenious mechanics had been baffled in the attempt to construct an efficient substitute for the hand in combing wool, and chiefly because of the apparently settled conviction that it was impossible to depart from the process adopted when working by hand.

Mr. Donisthorpe, now of Leeds, had made the most decided improvement in this direction in 1842 and 1844, and his machine was brought pretty extensively into use; but it was reserved for Josué Heilman, a Frenchman, to effect a total and vitally important change in the principle and working of combing machinery. Heilman took out a patent for his invention, in England, in 1846, but did not bring it forward till 1849. We have already described the hand comber's mode of treating his wool, and in order fully to appreciate the merits of Heilman's invention, it will be necessary to allude to the evils which were found to attach to the former, and still more so to the machines that were constructed with a view to carrying out the same process. In the previous process of washing, of course the staples of wool would become separated and the fibres crossed in all directions; when the comber therefore lashed the wool into the holding comb, the subsequent strain of working or drawing out would cause these crossed fibres to coil round the teeth of the holding comb, and so insure a firmer holding of the mass; and indeed it was necessary that it should be so held, or the action of the working comb would draw it entirely out of the teeth; but the consequence was, that when the operative came to draw out the end that had been worked, the other end had become so firmly fixed that it could only be extracted by breaking a considerable portion of the long fibres; by this means the noil or refuse was greatly increased, and the most valuable part of the wool, that is the top, in the same proportion, diminished.

Mr. Heilman avoided this mischief by a very simple process; by means of two nipping instruments, which closed upon the fleece as it was being fed into the machine, the point end was held in position till it was combed out by a revolving drum furnished with comb teeth; the cleaned end was then carried forward and taken hold of by another pair of nippers, till the other end had been treated in a similar manner; the same process was again and again repeated, and the cleaned tufts laid in succession, one overlapping another, so as to form a continuous sliver. By this gentle treatment, the loss and damage sustained under the old system was altogether avoided, and the spinning properties of the top greatly improved.

Figure 4, plate 3, exhibits the essential parts of Heilman's machine.—A is a framework containing two jaws, through which the prepared wool is fed into the machine; when the fleece has passed sufficiently through, these nippers close upon and hold it firmly at K; that part of the surface of the revolving drum D, which is armed with comb teeth, then passes up and combs the end hanging out. The drawing shews the nippers at K, holding the wool in position whilst it is combed by the passing drum. In the forward revolution of the drum, the plain portion of its surface passes up and presses against the uppermost of the drawing rollers E, when they are in the position of the dotted lines; at the same time gathering up the cleaned end of the fleece, and passing it in between the drawing rollers; the upper roller is turned by the friction of the drum, and the lower by pressure from the upper roller; thus a tuft of wool is detached from the fleece, and again held by a second pair of nippers. As soon as the roller and drum have taken hold of the



cleaned end, the first pair of nippers open, and in the act of opening presses the fleece up into the teeth of the comb B, at the same time that the comb C is caused to fall into this fleece, and thus, as the tail end is detached it is also partly cleansed by being drawn through these combs. The tuft is now entirely held between the two drawing rollers, which, with their framework are caused to travel down from the dotted lines to the lower position, shewn in the drawing, at a greater speed than the surface speed of the drum; the lower of the two drawing rollers is then brought into contact with the plain part of the drum, causing the rollers to turn in a contrary direction, and so bringing back the partly combed tail end of the tuft, which is held till it has received a second combing from the succeeding portion of the surface of the drum, which is furnished with comb teeth; the rollers then deliver the thoroughly cleaned tuft, and return into their former position to repeat the operation. A continuous sliver is formed by each succeeding tuft being laid so as to slightly overlap the one that has gone before, and it is passed forward into the can by the conducting rollers F. The two card rollers G and H are for the purpose of brushing the noil out of the teeth of the drum; it is then pushed out of the teeth of the roller H, by the point of the knife L, and carried away by the conducting rollers I.

Of course when the value of the discovery became fully known, it was reasonable to expect that the efforts of future inventors would be directed to the perfecting of improvements upon it; and accordingly we find Messrs. Lister and Donisthorpe applying for several patents in 1850, 1851, and 1852, and at subsequent dates, all of which consisted of modifications of machinery which were based upon this grand principle of Heilman's. But as the machine which is described and shewn in the specifications and drawings of 1851 is the only one now in use in the establishments of the inventors, or sold by Mr. Lister to the trade, a simple description of the leading features of this machine will suffice.

Figure 5 exhibits the leading features of Lister and Donisthorpe's machine of 1851.—The feed rollers A, and the screw gill A A, conduct the prepared wool forward into the machine, the screw gill also combs the tail end of each tuft of fibre that is drawn out of it.

It is generally understood that what is called a screw gill consists of two pairs of screws, one pair directly under the other, and of two rows of gill bars furnished with teeth; these gill bars extend across with their ends inserted into the screws on each side; the upper row of bars is conducted forward towards the nipping instruments, and when the foremost arrives at the end of the upper pair of screws it is struck down by two canes, which are affixed to the screws into the lower pair; these lower screws are arranged to conduct the bars in an opposite direction away from the nippers. When they arrive at the end next the feed rollers, they are struck up by another pair of canes into the upper pair of screws, at the same time inserting their teeth into the fleece; thus whenever a gill bar drops away from the fleece in front, another rises into it behind. The brush B is caused to descend and press upon the fleece every time that the nippers detach a portion, to prevent it rising out of the teeth. C is a pair of nippers, the upper jaw consisting of a broad blade with a sharp edge, which is a fixture, and the under one of an upright bar, which is caused to slide up and down by means of the tappet and bowl shewn in the drawing; this under jaw has a grooved surface into which the edge of the blade is inserted at every nip. D is what is called the porter comb, which takes the tuft from the nippers and deposits it in the teeth of the circular receiving comb E, of



which a section is shewn in the drawing. F is a brush which drops into the points of the teeth, and presses the tuft down into a proper position for being drawn off. The drawing shews the nippers in position to detach a tuft from the screw gills; when they have closed upon it, the framework in which they are held is caused to traverse through the arc of a circle into the position shewn in the drawing by dotted lines; the porter comb meets them there and pushes its teeth up into the end of the tuft, just as the nippers open and release it; the porter comb then passes away from where it is shewn in dotted lines, and in its second position transfers the tuft to the receiving comb. The accumulated portions are drawn away from the receiving comb in a continuous sliver, and as it is the nail or dirty end which is filled into it by the porter comb, the wool is completely cleansed by being drawn off. The nail which remains in the teeth of the receiving comb is removed in the usual way, by a knife lifter and conducting rollers.

It will at once be seen that this machine bears a striking resemblance to Heilman's in some of its parts and movements; it has a pair of nipping instruments which take hold of one end of the fleece and detach a tuft; and as the feeding means consist of a succession of rows of fine teeth, the other end of the tuft is cleaned or combed by being in this way withdrawn from among them; it then conveys the half cleaned tuft through the same arc of a circle as Heilman's drum describes, in order that the other end may be combed.

This soon attracted the attention of the proprietors of Heilman's patent, by whom an action for infringement was brought to trial in the month of February, 1852, before Chief Justice Campbell, and a verdict obtained in their favour. Mr. Lister who, in the meantime had become sole proprietor by purchase of the patent of Lister and Donisthorpe, did not think it advisable to contest the matter further, but removed this difficulty out of his way by purchasing Heilman's patent for combing wool, for the very large sum of £30,000. This machine of Heilman's has not since been brought into use either by Mr. Lister or his licensees; there are indeed certain parties to whom a number of these machines were sold before Mr. Lister bought the patent, some of whom, by certain alterations and modifications known only to themselves, and by skilful management have brought the working of it to such perfection that they declare they would not exchange it for any other; still there cannot be a doubt, that the machine which Mr. Lister is now using and selling to the trade, is a great improvement upon Heilman's, inasmuch as it is equally well adapted to comb all kinds of fibre, whether it be wool or hair, long or short, coarse or fine; and even in the short and fine, the only kind of fibre for which Heilman's machine is adapted, it can do double the amount of work within the same period of time.

It has already been stated, that in his patent of 1851, Mr. Lister had fully perfected his machine; and though he took out many patents in the following years, he has not, it is generally considered, thereby added in the slightest degree to the efficiency of that machine. His object has been to anticipate every possible modification or contrivance, whether by mechanical equivalent or otherwise, whereby the principle of his patent might be imitated and yet evaded.

On September 26th, 1852, Messrs. Preller, Eastwood, and Gamble took out a patent for improvements upon a machine which Mr. Preller had patented in 1842, and in which he first introduced the principle of transferring by hand a half cleaned tuft from one comb to another. Figure 6 is a description of this improved machine.

A A are the feed rollers which conduct the prepared wool into the machine. B is a reciprocating arm, at the end of which a taking comb is affixed; this arm is caused to traverse, backward and forward, through the half of a circle, commencing its semi-revolution at the feed rollers A, just so far above their level as to enable the taking comb to detach a tuft, and passing up on the other side till it is a little above the points of the teeth of the receiving comb F, its motion is reversed, and the resistance of the air raises the cleaned end of the tuft, which was hanging down, into a position to be deposited in and over the teeth of the receiving comb, while at the same time the taking comb withdraws its teeth from the noil end of the tuft as it travels down on its return to its first position at A. As soon as the tuft is thus deposited the brush E descends and presses it down into the teeth of the receiving comb. C is a cam, working within the arm B, which causes the taking comb to be drawn in towards its centre, when it arrives at the position B B; this is for the purpose of affording room for the latter to pass up with its tuft without disturbing the wool previously laid into the receiving comb. D D D are three card cylinders, through the teeth of which the taking comb successively lashes the tail end of its tuft, thereby effectually cleansing it. The top is drawn off in a sliver, and the noil removed in the usual manner from the receiving comb F.

Mr. Lister considered this an infringement of his patents of 1850 and 1852, and an action was brought before Lord Campbell, at Guildhall, but was referred by mutual consent to Sergeant Channell, with the understanding that his judgment should be decisive for the future. After several days hearing, the learned Sergeant pronounced in favour of the plaintiff.

On September 18th, 1854, a mechanic of the name of Crabtree took out a patent for an improvement upon the machine above described as invented by Preller, Eastwood, and Gamble. This improved machine is the same in all respects, except that the comb which detaches the tuft from the feed-means consists of a series of combs arranged at equal distances around the periphery of a drum, and that when, in the revolution of the drum, each comb arrives opposite to the receiving or holding comb, it is caused by a most ingenious mechanical contrivance within the drum to describe a half circle on its own axis, whereby it is brought into a position to deposit its tuft, exactly in the same manner as that of Preller and Co's., with the cleaned end over and in the further side of the receiving comb; the only other difference is, that the succession of card cylinders through the teeth of which the tail end of the tuft is drawn and cleansed, is by Crabtree placed at the top of the machine, and by Preller and Co., at the bottom.—See figure 7, plate 3.

A A are the feed rollers; B, C, E, and F, are a series of taking combs fixed on the periphery of a drum, which revolves vertically in the direction of the arrow, past the feed-means. At B the taking comb is standing with its teeth upwards, ready to detach a tuft as it travels past the feed rollers; it then cleans the tail end of the tuft by lashing it through the teeth of the three card cylinders H H H; as soon as each comb has past the last card cylinder, it begins by means of a mechanical contrivance within the drum, to perform a half revolution on its own axis, so that the teeth are still pointing upwards when it arrives at E, thereby enabling them to slip away from the tuft as soon as the latter is laid into the receiving comb G. The head of the brush I meets the tail end of the tuft as it descends, and raises it into a position for filling into the receiving comb, and the brush I then returns and pats it down into a proper position for drawing off. At D the taking comb is shewn in the act of turning round to deposit its feed, and at F



it is shewn again returning to its first position, so as to be ready to take fresh feed as it passes the rollers at B.

Both Preller's and Crabtree's are valuable machines, and well adapted for combing short and middle length wools; they clear their 'top' quite as well as Mr. Lister's, and will turn off nearly as large an amount of it per day; the only doubt entertained of them is that they do not fill the noil on so easily, and must therefore break the fibre more in drawing off.

Crabtree's machine was adopted by several of the manufacturers of Bradford and the neighbourhood, who determined to defend it against Mr. Lister; and Mr. George Leather, the Chairman of their meetings, appeared as defendant in a trial before Lord Campbell, on the 23rd and 24th of December, 1855. A verdict was found for the defendant, but, inasmuch as this verdict relied upon the fact that the patents, on the strength of which Mr. Lister brought his action, had been declared invalid for infringement of Heilman's principle, and not at all upon the merits of the case, Mr. Lister, with consent of the Attorney General, expunged from his patents the damaging matter, and again brought the question to trial before Mr. Justice Erle, at Chelmsford, in July, 1856, when, after four days patient hearing, it was decided on all the counts in favour of the plaintiff. A rule *nisi* has since been obtained by the defendant for a new trial. The points in which Mr. Lister contends that Messrs. Preller and Co., and Crabtree infringe his patents, may now be briefly noticed. It will be remembered, that in the patents of 1850 and 1851, Mr. Lister had perfected his real invention, and that most of the patents afterwards taken out by him were for defence, and not for use. At the above dates he had only adopted a pair of nippers as the means by which he detached his tuft; but in 1852, it seems to have occurred to him that the operation might be performed by a comb as well as by nippers; and accordingly, he at once took the necessary steps for securing this detaching comb by patent. From the evidence given, and the verdict recorded, at the trial at Chelmsford, it would appear that Messrs. Preller and Co., and Crabtree, infringe upon this patent of Mr. Lister's, by using a comb for detaching, and then transferring a half cleaned tuft to the receiving comb. The two machines (that is Lister's and Crabtree's) are different in appearance and construction, and in their modes of operation; the former cleans the tail end of its tuft in the act of detaching, and transfers it by an intermediate comb to the receiving comb; the latter first detaches its tuft, carries it away to be cleaned by a further process, and then transfers from the detaching comb itself to the receiving comb. Still the Judge was clearly of opinion that there existed only a colourable difference, and that Crabtree's machine must be declared to have infringed the patent of 1852. A far wider and more important question, however, than one referring to a mere modification of machinery, was involved in the decision that Crabtree had infringed Mr. Lister's patent of 1850. Mr. Lister insists that the principle of separating a tuft of fibre from any feed-means, cleaning the tail end, and then by mechanical means transferring such half cleaned tuft, by the other or dirty end, into the teeth of a receiving comb, so that when drawn off in the usual manner into a sliver, it may be entirely cleaned, was new at the time that he took out his patent in 1850. Something similar to the process of the defendant appears to have been attempted by earlier inventors. A person of the name of Williams patented a machine in 1807, which detached a tuft from a feed-means, but it only straightened the fibre, and did not clean either one end or the other. Henry Ross



also brought out a machine in 1838, consisting of a wheel revolving vertically, on the outer circumference of which were affixed a series of porcupine rollers, whose teeth, as they passed the feed, took off a tuft of wool; this tuft was pushed out of the teeth of the porcupine into the teeth of the receiving comb, as soon as the porcupine came in a line with the latter, by means of a brush which was made to slide above it; but, here again the tail end was not cleaned *before* the tuft was filled into the receiving comb. This machine of Ross's, and others, were more or less suggestive of the mode adopted by the defendant. The result of the verdict is, that Mr. Lister has been put in possession of a broad and valuable principle, and should he finally succeed in establishing his right to it, he will have the power to prevent all other inventors from improving in this direction, by whatever means.

It has already been remarked, that the lashing principle, which characterized the process of the hand comber and of the earlier machines, had failed in the hands of those who had attempted to improve upon it. Still, though the evils which have attended this mode of operation have been found to be great, it does not follow that they are insurmountable. A machine founded upon this principle was patented by Messrs. Ramsbotham and Brown, November 18th, 1854; it is an improvement upon two former machines, the one patented in 1846, by Mr. Ramsbotham; the other in 1850, by Ramsbotham and Brown. In the former patent the screw gill was claimed, generally, as a *combing agent*; in the latter it was introduced into the filling head for the twofold purpose of conducting the fleece forward to be fed in, and of cleaning the tail end in the act of feeding. The improved machine of 1854 has now been for some time regularly at work combing English and Botany wool. From all accounts it would appear to be a valuable machine, producing work of as good character, with as large a proportion of top, and of as good spinning properties as any other. In figure 8 there is a drawing of this machine. This sketch shews a back elevation of the machine, which presumes that the spectator is looking from behind the screw gill. It is a point of view which prevents the exhibition of some of the important parts, but which conveys the best idea of the peculiar features that distinguish this machine from all others. All the machines that have hitherto fed through teeth have drawn the fibre *straight out* from the face of the gill or of other series of teeth, the teeth of the feeding and receiving combs being parallel to each other; while the novelty in this machine consists in its filling its fibre into the teeth of the receiving comb *across* the face of the gill, and with the teeth of the one standing at right angles to the teeth of the other. C is the bed on which the screw gill D D is caused to slide, in order to effect a feed; when it is close up to the end of the slide at A, and just as it is reversing its motion to return to B, a comb called the catch comb, which is not shewn, but which is suspended in front of its position at A, drops into the end of the fleece projecting out of the face of the gill, and is caused to recede a short distance through it, thereby moving the noil into a better position for reaching the back chambers of the receiving comb, but as this is accomplished without any strain, the noil, though moved forward, is not fastened, as by the taking comb; the catch comb then rises out of the fleece and the gill slides onward, as shewn in the drawing, close past the outer orbit of the circular receiving comb E, delivering its feed into the teeth from one end of the gill bar to the other; it will also be observed that the gill bars are inclined to the plane of their motion, by which the feed is distributed over a larger surface of teeth, causing the portions filled in to

overlap each other, and to draw out more easily than if each portion were massed together at one point from a level bar. A guard plate, which is not shewn, rises up and covers the fringe of wool hanging out from the circle, so that the screw gill in sliding back from B to its first position at A, for the purpose of again pulling in, does not ruffle the fringe in passing. The receiving comb revolves vertically in the direction of the arrow, the top is drawn off, and the noil afterwards removed in the usual manner.

It has been explained, that in consequence of the crossed state in which the fibre was fed in, combined with the strain produced in detaching and afterwards working and drawing off, it was so looped and fastened among the teeth of the comb, that the cleaned wool could not be separated without a considerable breakage of the long fibres, and serious damage to the spinning properties. It is, in these respects, that the superiority of Lister's machine is most strikingly exhibited; each fibre is held through its entire length by a succession of rows of teeth, so that when it is drawn out each passes easily away without any locking or breaking; the end, also, which is taken hold of by the nipping instruments, and which contains the noil, is not disturbed, but laid lightly and in the position in which it was nipped into the teeth of the receiving comb; the noil is lodged in the chambers of the three or four back rows, leaving an equal number of chambers in front charged with fibre that has been already cleaned; this constitutes the great advantage of the nip over a taking comb, as the taking comb draws all the noil to the end of the tuft before it detaches it, and in the strain of separation compacts it into a hard band; in this state it is carried to the back of the last row of teeth in the receiving comb, and of course more fibre is broken by the increased strain required to draw it off.

The machine of Ramsbotham and Brown, though strictly a lashing machine, avoids the evils of that process, by, first of all, feeding through the above mentioned succession of rows of teeth, viz: the screw gill, secured to them by their earlier patents; and then by the action of the catch-comb gently moving the noil a short distance forward in the end of the fleece which projects from the face of the gill; this does not in the least fasten the noil, but places it in such a position, that when the lashing takes place the noil is distributed over the three or four back chambers, leaving only combed wool in the front chambers; by this means the easy filling of the nip is attained, without its one great disadvantage, the cutting of the fibre.

The history of machine combing has now been briefly sketched and brought down to the present time. There are many patents which have not been alluded to, and many ingenious machines which have not been described; and simply because they have not been brought into beneficial use, or, at all events, have been abandoned after a time, for something better.

Mr. Lister has indeed brought out another machine, in which he is combing cotton at his works at Addingham, and of which report speaks highly; and Mr. Donisthorpe is also getting a new machine of his invention to work, which it is said is so superior that it will ultimately drive all other combing machinery out of use; but as the public are carefully excluded from a knowledge of these machines the present notice must suffice in passing.

By far the greater proportion of all the wool, of whatever kind, now combed, is combed by Lister's machine. One of his double headed machines will easily do the work that used to task the fingers of one hundred skilful men, and this in so

superior a style, whether as regards colour, clearness, or proportion of top to noil, as to make it exceed the performance of the hand comber almost as much in quality as it does in quantity of work. Indeed it has often been remarked by manufacturers, that if they were now obliged to go back to hand combing they could not produce a saleable piece of goods.

It will afford some idea of the great advantage derived to the worsted trade, by the introduction of machine combing, when we state that the wool for which the hand comber was paid two shillings per pound in the pound of "top" combed, and this *exclusive* of the cost of oil, soap, and charcoal, is combed by the machine at a cost of about fourpence per pound, *including* oil and soap, &c.

Along with the introduction of cotton warps, this immense reduction in the cost of combing, has led to the wonderful expansion which our trade has experienced of late years; at the same time it is gratifying to remark that the distress attending a social change so sudden and so violent, should so soon have passed away. The operatives displaced were soon absorbed in other employments, and now, as has ever been the case where the introduction of machinery has lessened the cost of production, the increased trade has led to the employment of a far greater number of hands than before the change took place.

**CARDING.** Formerly the carding of wool could only be employed in the preparation of the material for the making of woollen fabrics. But of late years the carding process has been brought to the aid of the worsted spinner, and has been found a useful auxiliary in the preparation of wool for making cobourgs, or other like textures requiring a clothly surface. This change, among many others, marks the great range of the worsted manufacture, which now distinguishes it from the circumscribed limits formerly bounding it. Mechanical genius and the enterprise of the age having brought the carding and preparation of cotton to such perfection, the notion that upon the finer and shorter fibred wool of England, and also upon colonial wool the like method would be applicable, led many enterprising individuals to attempt the carding of the shorter fibred wool for making worsted yarn.\* Several modes of effecting this were adopted, till at length the method

\* Among those who first carded wool for the worsted manufacture may be mentioned Mr. William Lister, who, about the year 1820, commenced the working of a carding machine at Idle. A patent for it was obtained, but owing to the adverse claims of other parties, never became beneficial. Mr. George Anderton, of Cleckheaton, in 1829, began the system of carding wool previous to combing it, which answered well. Mr. Anderton also deserves honorable mention for early improvements in combing machines. Among others, he invented the method of drawing off the wool from the combs, by means of an endless strap and fluted rollers.



pursued in the preparation of cotton has become one of the processes extensively employed in that of worsted. The carding machine used for this purpose is, in its chief features, like that of cotton, and brings off a continuous sliver. In the spinning of yarns of low count, the carding machine has become of much importance from its economy of production, and also from its enabling wools, formerly considered ineligible for spinning worsted thread, to be used to advantage. Although the yarns made from wool thus prepared are neither as tough nor so smooth and level as those required for most worsted goods, they are, from their cheapness and adaptation for particular classes of stuffs, a great acquisition to the worsted manufacturer. It seems probable, from its economy and ready application, that the carding method will become year by year a more important agent in the production of worsted stuffs. It must, however, be understood that the carding process is merely a preparation for the combing machine, as the carded wool is afterwards passed through it.

**DRAWING.** When the wool is combed by hand that part of the sliver which is first drawn from the comb contains the longest fibres, and the last drawn, the shorter ones. It is necessary therefore in order to make fibres of the sliver uniform, to submit it to a process termed ‘planking,’ that is the long end of one sliver is placed over the short end of another, and the two being passed through rollers the fibres are equalised, and the comber’s sliver six or seven feet in length is drawn into a continuous ribbon or sliver. The ‘planking’ or splicing process is not required for wool combed by machinery, inasmuch as the long and short fibres of the wool are thereby laid alternately and ready to be submitted to the drawing frame. The whole process of ‘drawing’ is, in truth, only a finishing of combing, in which the fibres are further stretched, laid straight, and cleaned from any knots which may remain after it has passed the combing machine.

There are six drawing frames to complete a “set of drawing” as they are termed:—

1. A number of slivers, say sixteen, are placed upon a table and passed in two divisions through two sets of rollers,

so as to make two slivers. Each sliver is then drawn through a set of screw gills, and afterwards between a pair of large rollers, whence the drawing is passed into the coiling can, where the two drawings are loosely twisted into one. This coiling can is a recent addition to the drawing frame. Previously the drawings fell in folds into a stationary can, but the coiling can, both joining two drawings into one and giving them a slight twist, better prepares them for the subsequent processes. The screw gill is also a modern addition to the drawing frame. Formerly the drawing was effected by two pairs of rollers, the first pair slowly revolving merely pressed the sliver whilst the second pair moving with much greater velocity drew it out several times smaller.

2. Eight of the double slivers received from the drawing frame number one, are passed through the same kind of machine.

3. The same eight slivers are again passed through the like machine.

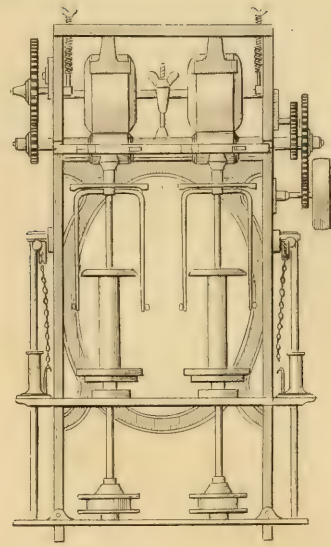
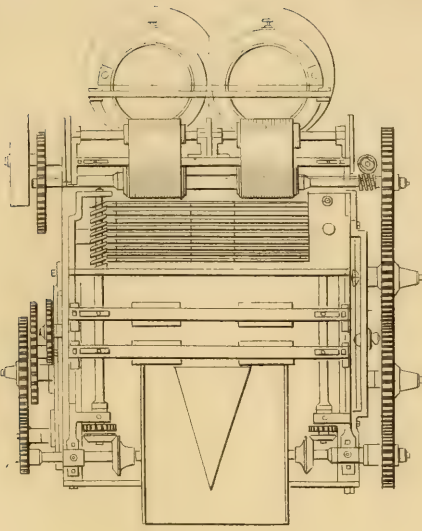
4. This process is the same as the last two, except that the drawing frame has, instead of the coiling can, fixed to it two large spindles upon which the drawing is slightly twisted or spun into what is designated a 'slubbing.'

5. In the fifth drawing frame there are no screw gills. Sixteen of the slubbings in sets of four, and of equal weight, are drawn through four sets of rollers and spun loosely upon four spindles, so that four of the slubbings from the last frame are drawn much smaller and wound upon each spindle.

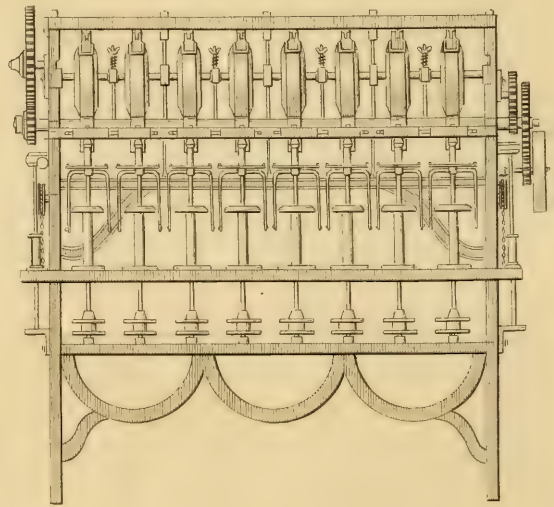
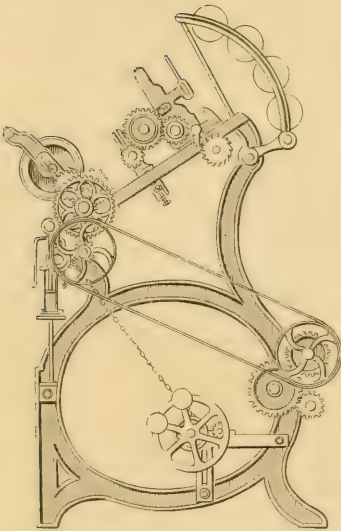
6. This the last process of drawing is termed finishing. One of the frames, No. 5, supplies slubbing sufficient for two finishing frames, which are in all respects similar in form to the frame No. 5. Three of the slubbings from No. 5 are passed through the rollers and wound upon each of the spindles of the finishing frame.

From the above description it will be seen that each set of drawing frames contains four gill boxes, (that is drawing machines with screw gills similar to those in Lister's combing machine,) the last gill box having two spindles and fliers; then

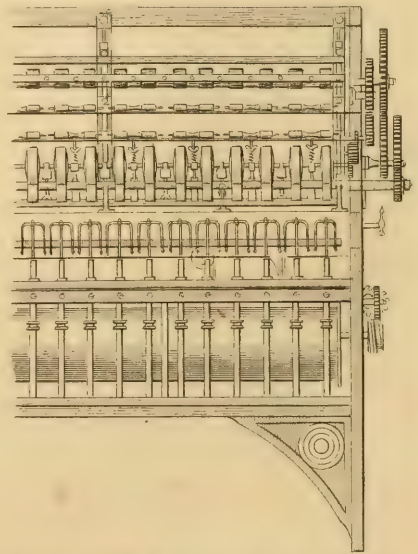
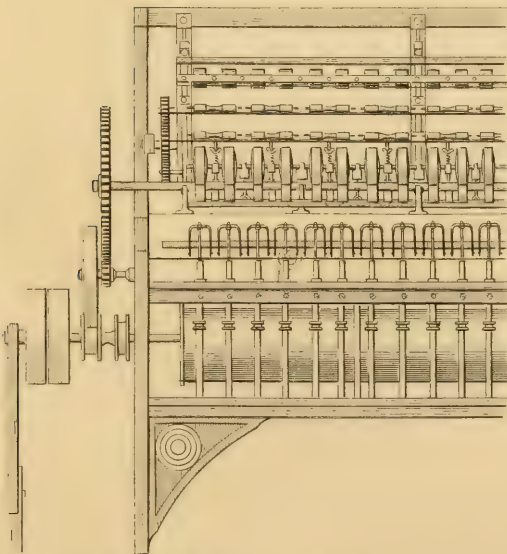




ROVING,



SPINNING.





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a spindle box with four spindles, and lastly two finishing machines containing four spindles each.

ROVING. It will have been observed, that the last processes of drawing were slovenly spinning, as the name 'slubbing' denotes. But roving approximates still nearer to spinning. On the drawing being completed the finished slubbings are transferred to the roving frames, which reduce the coarse and loosely twisted thread still further, to fit for spinning. There are in a set of roving six machines, all exactly alike, and containing each eight spindles. The two finishing frames of the drawing process supply slubbing for the set of roving. After having passed through the roving, the thread is sufficiently reduced and has sufficient tenacity to be ready for the spinning frame.

SPINNING. The next and final process for forming the thread is that of spinning. In chapter IX., there is a notice of the ancient spinning wheel,\* and also of Arkwright's and other spinning machines. In the early part of the century, the water frame of Arkwright (so called because it was turned by water power) contained only a few spindles, (see page 366,) even long after the throstle appendage had been applied. But now, spinning frames number one hundred and twenty spindles and upwards. The whole process of spinning is in principle the same as roving, only the machinery is finer and the spindles smaller. The 'rovings' are carried first between two metal bosses or rollers, the lower of which is fluted longitudinally, and next between three pairs of carrier rollers which are small and draw forward the 'rovings.' Lastly, the roving passes between two front rollers, and hence to the spindle. In yarns spun to 30s, that is thirty hanks to the pound weight of yarn, it is estimated that the thread receives from the spindle about ten twists to the inch, and so in proportion to the fineness of the yarn. The

\* At page 334, it is mentioned, that it remains in obscurity when the common spinning wheel was introduced here. I observe that Haydn in his Dictionary of Dates, under the article "Spinning," states, "The Spinning wheel was invented at Brunswick about 1530." White, in his History of Inventions states, it was introduced here in 1520. It no doubt existed in Hindostan in the early ages.

overlookers estimate that one yard of roving formed out of long stapled wool will, on an average, spin in 30s to fourteen yards, and in short stapled wool to ten or twelve yards. It is calculated that the sliver, in passing through the drawing and roving processes, is doubled 245,760 times.\*

In plate 4, figures are given of drawing, roving, and spinning machines, made upon the present improved mode of construction, (by Messrs. Berry, of Bradford,) and will afford the reader, along with the above descriptions, a general knowledge of the processes. Very little yarn in the worsted manufacture is spun except by the throstle. A few spinners in Bradford employ the self-acting mule for spinning particular kinds of fine yarn, but the quantity is so small as to have no perceptible effect on the worsted manufacture.

Until a few years since the yarn used in the home trade had to be wound from the spinner's bobbin upon the weaver's bobbin, but now it is spun upon spools ready for the weaver, and thus much labour is saved. But when the yarn is intended for export, it is mostly, by means of a reel, made up into hanks, each containing five hundred and sixty yards.

The method of preparing the chain or warp was formerly a tedious process, but now by means of warping and sizing machines is rendered much more simple. It is needless to notice these processes at any further length, as they are similar to those in the cotton and woollen processes, and now

\* "The process of the drawing frames is to elongate, and further lay even the fibres of the wool previous to spinning. For this purpose the slivers are placed in tin cases; five or seven of them are united and drawn out to the thickness or less than the thickness of one. It follows that each length (if five be united) will contain one-fifth part of each original sliver; and if the process of elongation be five times repeated, the roving before it goes to the spinning throstle will contain portions of 3,125 slivers. The result is evenness and strength: for the chance of two ends of fibres occurring in one place is very small, that three ends should occur at one place is next to impossible.

Worsted spinning is performed, not by the mule but by the throstle, a machine by which the rovings are elongated by being passed between rollers, and are then twisted into yarn and wound round cops or bobbins. After being thus spun the bobbins are taken to the reelers and are reeled off into hanks of 560 yards. They are afterwards made up into packets containing a dozen gross of hanks, and such as are to be sent to a distance are packed in bales."—Mr. Chapman's Report on the Condition of Hand-loom Weavers of Stuffs.



most of the warps used in the worsted manufacture consist of cotton.

**LOOM.** Nor is it necessary to describe with any minuteness the parts of this well-known instrument, especially as the worsted power-loom is, in all its parts, similar to that of cotton. The hand-loom is now comparatively little used. It is singular how little it has varied in all its main features for centuries. The hand-loom of modern times is essentially the same as that used in the middle ages. (See plate 1.) The history of the power-loom is sketched in chapter IX, and its introduction into the worsted manufacture mentioned at page 414.

Within the last fifteen years the worsted power-loom has approximated to that of cotton in the form of its construction. Formerly the worsted loom, owing partly to the heavy kind of goods woven therein, was a heavy clumsy machine, which made about eighty picks of weft a minute, at a period when in the cotton manufacture the number of picks would reach one hundred and sixty. About fifteen years ago a firm who had been engaged in the cotton manufacture began to manufacture mixed worsteds at Bradford, and introduced a loom in which they could produce ninety picks a minute. Since then there have been gradual improvements, so that at present the worsted power-loom is an exceedingly compact apparatus, taking up little room, easily worked, performing all the weaving operations with the exactitude of intelligence, making in light fabrics, such as orleans one hundred and seventy picks a minute, or five pieces a week in low goods, and requiring little tending, especially since the application to it of the stop weft motion patented by Mr. Kenworthy, of Blackburn. The effect of this invention is to stop the weaving when the weft breaks.

**DYEING.** This art is, in its origin, nearly coeval with that of weaving. We find scattered notices of it in the most ancient writings, and at a very early period it had attained to considerable excellence. Moses speaks of stuffs dyed sky blue, purple, and double scarlet; and to dye these colours would require elaborate preparations. Job also mentions

the brilliant colours of the stuffs which were brought from India. But among all the ancient nations, Tyre stood distinguished for its dyes, so much so that a Tyrian garment became proverbial for the beauty of its tints.

One of the vexed questions of the moderns is, whether the ancients were acquainted with that which constitutes the very basis of the art of dyeing in the present day, namely, the use of mordants. It seems, however, quite clear from the following passage in Pliny, that the Egyptians, who possessed extensive knowledge in the arts of life, practised the method of fixing their dyes by means of chemical agents. These are his words (Book xxxv.):—

“In Egypt, they stain stuffs in a wonderful manner. They take them in their original state, quite white, and imbue them not with a dye, but with certain drugs, which have the power of absorbing and taking colours. When this is done there is still no appearance of change in the stuffs, but so soon as they are dipped into a bath of the pigment which has been prepared for the purpose, they are taken out properly coloured. The singular thing is, that though the bath contains only one colour, several hues are imparted to the piece, these changes depending on the nature of the drug employed; nor can the colour be afterwards washed off; and surely if the bath had many colours in it they must have presented a confused appearance on the cloth.”

Whoever looks at the ancient paintings of the Egyptians which have been discovered in their tombs and temples must be convinced that in the disposition and brilliancy of their colours, as well as in the design, they were far beyond mediocrity; and it cannot be supposed but that they would impart to their textile fabrics the same beauty of design and colour.

In the middle ages the art of dyeing, except in its simplest processes, seems to have been nearly lost. The dyes were of the most common description. In former pages of this work worsted stuffs are alluded to of various primitive colours, such as green, red, blue, scarlet, and black. Red seems to have been a favourite dye among our ancestors, and (at page 82) two varieties are noted, a bright vermillion red and a common one; the former probably produced by kermes, and the latter by madder. Their list of dyewares comprised only a few articles, such as woad, kermes, madder, alkanet root, nut

galls; for cochineal, logwood, and indigo only came into use in comparatively modern times, and the latter two were at first much decried. Our old English dyers originally obtained a knowledge of their best processes of dyeing from the Italians, and like them used alum for the purpose of fixing their colours.

About the time of Charles II., the subject of dyeing received much attention. Previously a foreigner had brought hither a discovery whereby cochineal, which of itself gives only a crimson colour, produced with a solution of tin, a scarlet one. From the latter part of the seventeenth century we may date the growth of the art in this country. London, Norwich, and Coventry became noted for their dyers. The Bowdye of London and the true blue of Coventry, were words denoting super-excellence. Even long after the West-Riding of Yorkshire had risen into importance as a seat of the worsted manufacture, its stuffs were forwarded to London to be dyed and finished. In the latter process, London excelled any other place.

But the vast increase of the Yorkshire manufacture of stuffs, and the large export of them from Hull and Liverpool produced the necessity of dyeing the common sorts on the spot. Halifax was, it is stated, among the first towns of the North to adopt stuff dyeing, and with Leeds, long continued to possess the larger portion of this business.

During the early part of this century, the Norwich dyers, Messrs. Stark, carried to perfection the dyeing of some descriptions of stuff goods, particularly bombazines, both in black and other colours.

Formerly most of the stuff pieces purchased in Bradford were dyed at Leeds, Wakefield, and Halifax, where many of the merchants had their places of business; but Bradford having become the centre of the stuff trade, not merely for the manufacture, but for the sale of goods to the dealers all over the world, a large portion of those pieces are dyed on the spot. Some large dyeing establishments have existed in Bradford for many years, but several others have arisen, and the stuff dyers there now rank among the best in the kingdom.



Especially in the dyeing of mixed goods fabricated with cotton warp and worsted weft, they are super-eminent. Some years since the cotton warps were dyed previous to being put in the loom, but now mixed goods wholly in the white state, can be dyed as perfect in colour as merinoes composed of wool alone. To attain such a proficiency much chemical knowledge and skill have been expended ; for when cotton warps were first introduced the dyers were quite at a loss how to meet the difficulty, and it was long doubted whether it could be effectually surmounted.

A very cursory description of the processes in a stuff dye-house may now be given. Wool, as is a well-known fact, very readily receives a permanent dye, much sooner than cotton or other vegetable substances. This quality in wool rendered the processes of the early stuff dyers comparatively simple. At present, from the intermixture of cotton, and from the numerous dye-wares and complications of chemical agents, the art is one requiring much skill and care.

The following are the main processes which a piece of mixed goods (that is of cotton warp and worsted weft) undergoes in dyeing:—

After the pieces have been marked with the initials of the owner, and ten or twelve of them been stitched together, they are submitted to what is termed “crabbing,” that is, the pieces are wound upon a cylinder placed in a trough containing hot water, and hence are wound tightly upon another cylinder. By this means the web is smoothed, set, and scoured, and being bound in a wrapper is ready for the next operation.

This last cylinder is hollow and perforated with numerous holes, and being placed upon a kind of horizontal stock having a steam pipe attached to it, the steam is powerfully forced into the hollow cylinder, whence it spreads through the holes over every part of the web. This process prevents the shrinking or crimping of the fabric.

After being steamed the webs of cobourg stuffs are passed through a drying machine consisting of two rows of cylinders heated with steam, and come out at the end of the machine thoroughly dried, and are then disposed in folds by means of a simple swinging machine.

Next, the webs are taken to the singeing room, where they are rapidly passed over furnaces with circular tops, some formed of iron, and some of copper plates, heated red hot. To singe off the worsted hairs they are first passed two or three times, at the rate of about one hundred yards a minute, over the iron topped furnaces ; and lastly, at a slower rate once over the copper plate to singe off the cotton fibres.

Now the piece is ready for dyeing. It would altogether be beyond the scope of this work, to enter into any detail upon the subject. But to give the reader a glance

at the method of dyeing mixed goods, let us take as an instance the following, for dyeing black:—Several processes are necessary. The preparation of the cotton for receiving the colouring matter is generally done by the use of sumach or other similar astringent substance, then the goods are passed through a solution of iron; afterwards the wool is prepared by boiling the goods in bichromate of potash. When this is done, the two materials, cotton and wool, are in a state to receive the colouring matter, and by one operation in a bath of logwood liquor, they receive the shade of black required. The stuff is now dyed thoroughly both in the cotton and wool.

It will instantly be perceived, that to dye a mixed piece of stuff requires very numerous processes, of which the above is a bare outline. For other colours the methods are similar, only for some dyes they are not so numerous. As an example, to dye Royal blue the piece is immersed in a bath of prussiate of potash and some other chemical agents, (technically termed "spirits,") and this dyes the wool, and on being passed and repassed through a solution of iron and prussiate of potash with acids, the piece is completely dyed.

After being dyed and rinsed the webs are carried to the drying machines, which are similar to those mentioned before for goods in the white state.

The last process is that of pressing. The pieces are folded in short lengths between a stout smooth paper, termed press paper; then twenty or thirty of these pieces are put in a press worked by a screw, or else by an hydraulic machine, and after remaining there some time, they possess the beautiful smooth and glossy appearance which they present in the drapers' shops.

Having thus shewn the several methods for preparing, dyeing, and finishing a piece of mixed stuff goods, it will suffice to observe, that those for stuffs made wholly of worsted are similar, except wool fabrics have only to be submitted to one set of processes for dyeing them. Merinoes, and many fine pieces are previous to being pressed, passed through a cropping machine (similar to the one used in the woollen cloth trade) which cleans the stuff of knots and hairs. Formerly worsted pieces were boiled, after being scoured and 'crabbed,' instead of being steamed.

On comparing the list of dye-wares and agents now employed with those in use at no long distance of time, one is struck with the number of chemical substances which the modern dyer has at his command. The ancient dyers relied almost solely upon alum and a solution of tin, as their mordants, and upon vegetable substances for their colours. Now the number of mordants is much increased, and their qualities and combination better understood; the dyer has recourse for his most brilliant and lasting dyes to the chemical kingdom, and can so modify and arrange them as to produce every desired shade of colour readily, and at comparatively small cost.

Indeed to the stuff dyers, the worsted manufacture, since the introduction of mixed goods, is largely indebted for the extension and prosperity which it has attained. These stuffs

are now dyed in such beautiful and durable colours, and finished with so soft, smooth, and lustrous a texture, as to have become the most graceful of female drapery. A Bradford manufacturer, well qualified to offer an opinion, thus sums up the obligations to which the manufacturer is indebted to the exertions of the stuff dyer :—

Infinite credit is due to the dyers of Bradford goods for the extraordinary and rapid improvements made in their art. The manufacturers are indebted beyond all computation to the efforts at improvement continually put forth by the dyers. By the joint aid then of the dyer and manufacturer, such goods as figured orleans, produced at prices from eight shillings and threepence to about twenty-five shillings the thirty-six yards in the grey, are made to assume a lustre and brilliancy of color which could not have been dreamed of a few years ago. Figured mohairs in elegant styles may be bought in the grey state at prices ranging from twenty-five to sixty shillings for thirty-six yards. Both these and other classes of goods are now cross-dyed with the greatest success; that is, the weft is dyed one color whilst the warp retains another, being dyed what is termed a “fast color:” this species of dyeing is also done in stripes and checks with excellent effect.

Nearly all the Mousselines-de-laine and other stuffs intended to be printed are forwarded to Manchester and Glasgow. It is probable that the printing of stuffs will be much more developed than at present, for we see from the specimens which are exhibited, that this branch of art has yet much of growth in it. The process of stuff printing is altogether so similar to that of calico printing, that it would be needless in this work, to further describe it.



## CHAPTER XV.

## SEATS OF THE MANUFACTURE.

Bradford, Halifax, Keighley, and other towns in the North, Norwich, Sudbury, and other towns in the South of England.

BRADFORD. Seated at the confluence of three streams, in the immediate neighbourhood of coal and ironstone, the situation of Bradford is one admirably adapted for a manufacturing town. To quote from the History of Bradford, "The town lies in a valley which may justly be considered a branch of Airedale, though, from a remote period, it has borne the distinctive appellation of Bradford-dale. This valley, stretching from the moorlands above Thornton to the Aire at Shipley, forms at Bradford a considerable bend; and being at this point joined by two small dells the town appears to be seated at the junction of four valleys." This circumstance gives to the place a remarkable appearance, and renders the greater portion of it visible, especially when entered from the Leeds road. The surrounding landscape is picturesque, and must have been highly pleasing previous to being defaced by manufactures, whilst the air in its natural state, though thin and piercing, is very salubrious, as the records of longevity testify.

As a forecast of the destiny which in latter times awaited Bradford, its inhabitants in remote ages were engaged in manufacturing wool. So early as the year 1316 a fulling mill stood near the town, and it may be inferred from the con-

siderable annual rent which it brought to the Lord of the Manor, that at it large quantities of cloth were fulled. How long previously the manufacture had been carried on here it is vain to conjecture, probably from as early a time as any town in the North of England.\*

That the woollen trade flourished exceedingly at Bradford in the days of Henry VIII., we have the best evidence from Leland, who narrated that it stood much by clothing, and estimated it to be as large as Leeds; but that the latter, to use the quaint language of the old topographer, was "*not so quick*."† Previous to the Civil Wars, it had attained to great prosperity; Clarendon terms it "a rich and populous town depending upon clothiers."

After the Civil Wars, the town, being depopulated in the struggle, and its trade having dwindled to insignificance, remained in an unprosperous state nearly a century. In the meantime the manufacture of shalloons and other coarse worsteds had (during the latter portion of the seventeenth century) been transplanted into the parish. (See page 201 *ante*.) Chief among the causes which tended to bring the worsted trade from the South of England to the North, may be noted the cheapness of labour.‡ Norwich had from an early period enjoyed, almost without competition, the benefit of the fabrication of stuffs, and the workmen of that city, intelligent and full-spirited, obtained high wages; fared, as operatives, luxuriously; and as a consequence, were often insubordinate, and 'struck' for higher remuneration. The

\* In the neighbourhood also, the woollen manufacture early prevailed. In the Hundred Rolls of 1284, it is recorded, that Evam, a weaver, of Gomersall, was imprisoned in Bradford jail. Frizinghall, near Bradford, (probably so named from frizes being there made,) is mentioned in 1287. Many of the Flemish manufacturers brought over by Edward III., settled in this neighbourhood and taught the art of making *fine* cloths.

† There was a great revival of the clothing trade in these parts of Yorkshire, in the time of Henry VII., and again in the days of Queen Elizabeth, when many persecuted Flemings, who had left their country for conscience sake, settled in Halifax and Bradford parishes, and probably laid the foundation of the strong puritan feeling which prevailed there.

‡ The spinning of worsted yarn for the Norwich trade was early carried on in Yorkshire upon an extensive scale. (See p. 211.)

history of Norwich is blotted with the mutinies and strikes of refractory weavers. Compared with the Norfolk weaver that of Yorkshire presented many points of contrast: frugal and industrious, sustaining himself and family principally with oatmeal porridge, oat bread and milk, sparingly partaking of butcher's meat, the latter could and did, labour for wages much below those of the southern workman. What then so natural a course as that the Yorkshire weaver, a skilled and dexterous hand on woollen cloth, should be entrusted with the weaving of stuffs, which now began more and more to extend in use! Thus arose the worsted manufacture, in what may be termed the Apennine region of England, comprehending the parishes of Bradford, Halifax, Keighley, Colne, &c. The Yorkshire master weavers of this age were a remarkable race—of untiring energy and saving habits, their whole aim seemed to be the honest gaining of money. As an example of the thriftiness of this class, Thoresby, who lived about 1700, narrates that the refreshment given by the innkeepers to the clothiers who, from Bradford-dale and other quarters, frequented Leeds market, consisted of a pot of ale, a noggin of porridge, and a trencher of boiled or roast beef, the charge for which amounted to twopence.\* Such an inexpensive mode of existence, coupled with unceasing attention to business and good profits, enabled the Yorkshire clothiers and stuff weavers, to use the words of old Fuller, “to proceed, gentlemen, gaining estates for themselves, and worship to their estates.” But what a contrast the simple manners of these ancient master weavers furnish to the luxury, refinement, and display of the modern manufacturers!

A glance at the habits of these manufacturers of the 17th and 18th centuries will be entertaining, and also instructive. They rose betimes, and after a breakfast of porridge and milk, betook themselves to the business of the day. Pre-

\* Being lately upon a visit to Lothersdale, a secluded district of the West-Riding, I observed one of its aged inhabitants eating roast meat with oatmeal porridge, which he seemed to prefer to potatoes. About the year 1700 potatoes were only a luxury in the gardens of the affluent, and “greens” were far from plentiful. Hence the custom of eating porridge to flesh meat.



cisely at noon they dined ; from Martinmas to Pasch, mostly upon salted beeves which generated the scurvy, a prevalent and frightful complaint in those days. At Easter, they broke their fast on fresh meat, and instead of the modern luxury of tea, they partook in the afternoon, of cold meat and bread, washing the repast down with copious draughts of ale. This was called, as it is to the present day in Bradford, “the drinking.” Yorkshire ale in those days was proverbial for its excellence ; and the practice of domestic brewing was then, as it is now, commoner in this district, than in any other of England. De Foe, who visited here in the winter about 1720, says in his *Tour*, “the people had a happy way of mixing the warm and cold together ; for the store of good ale which flows plentifully in the most mountainous parts of this country, seems absolutely to make up for all the inclemencies of the season.”

Progressively increasing in the parish of Bradford, the making of worsted stuffs had, in the early portion of the last century much encroached on the ancient trade of the town,—that of woollens ; and by the middle of the century had grown to importance. In 1752, a petition from the shalloon and calimanco makers of Bradford was presented to Parliament, as before noticed at page 265. Soon after the town increased in size and opulence, turnpike roads to it were formed, its canal communication commenced, and finally the foundations of its Piece Hall were laid in the year 1773. An eye-witness writing about the time, thus describes the structure, and the market held therein :—\*

“For many years past the manufacturing of worsted stuffs, such as calimancoes, &c., which is arrived at great perfection, is now become the chief staple trade within the town and the neighbouring villages. For the sale of such goods there was erected in the year 1773, by the subscription of the gentlemen, merchants, woolstaplers, manufacturers, and others in the town and neighbourhood, a very elegant and commodious hall about fifty yards in length and eleven broad, the lower room of which is divided equally into two, by a brickwall running from end to end of the said building ; against this wall in these apartments are fixed about one hundred closets in a very commodious manner, with a shewboard to every

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\* Mr. Hartley, Schoolmaster, of Bradford.—See the *History of Bradford*, p. 271.

such closet to shew the goods upon. These closets are the property of such manufacturers as at first subscribed, with power to transfer. In these closets are repositied goods from one market-day to another. The upper room is also closeted, but upon a different plan; these are occupied by such as did not subscribe, paying a certain rent yearly for the use of them. Hither are brought great numbers of pieces of different kinds, besides worsted tops and gross yarn, which are exposed to sale every market-day, which is on Thursday precisely at the hour of ten in the morning, announced by the ringing of a bell, hung in the cupola for that purpose. It holds until half-past eleven, when the said bell gives notice for the immediate breaking up, and likewise at the hour of two in the afternoon of the same day the bell again is rung for the opening of a market for the sale of worsted tops and gross yarn, and holds till half-past three, when in like manner as before the market is rung off.”\*

Even while writing this work, a nonagenarian informs me that he remembers the site of Bradford Piece Hall being occupied as a garden, wherein stood a fine pear tree. He relates, that the stuff makers from a distance, mounted on horseback, brought their goods to market in front of them, whilst the smaller manufacturers were content to convey their wares in packs bound upon their shoulders. As mentioned at page 289, the stuff makers from the surrounding districts had, previous to the erection of the Piece Hall, closets in a large room in Bradford to deposit their goods in from one market day to another.

During the whole of the latter part of the last century, the inhabitants of Bradford were, male and female, adult and child, mostly engaged in spinning and weaving stuffs fabricated altogether from wool. On fine days the women and children might be found in the streets and lanes fully employed with the labour of spinning upon the one-thread wheel, in which they greatly excelled. (See pages 286 and 358.) But notwithstanding the hum of the common spinning wheel (not the idle trills of the piano) was heard in every house in Bradford, yet in the latter part of the last century its looms

\* From a paper in my possession, it appears that the original Piece Hall cost £1,555, and contained one hundred stands. Soon afterwards another Piece Hall was erected, called the “New Piece Hall.” Both these contained two hundred and fifty eight stands. A few years since the trustees of these halls disposed of them by auction as they had become almost deserted, the stalls being incommodious and unsuitable for the extensive business of the manufacturers who now, for the purpose, require extensive warehouses.

increased so fast that yarn could not be produced in the town in sufficient quantities to supply them, and most part of it used in the manufacture of Bradford stuffs was spun by the inhabitants of Craven and the northern valleys of Yorkshire with the domestic spinning wheel. The manufacturer then was generally woolstapler and spinner for himself. Imagine him accoutred according to the uncouth fashion of the day in huge wig and cocked hat, mounted upon his staid "old dobbie," with a quantity of wool tops behind, setting out to Craven or the North with work for the spinners, and to bring back yarn. Unlike his sons, he was content to obtain money slowly and laboriously, so that he gained it surely, but now the maxim is reversed.

In like manner the manufacturer of those days took journeys into Lincolnshire, and other long wool producing localities, at clip time, and mostly bought sufficient wool to serve him for a year. It was chiefly sorted and combed, and often spun by his wife and daughters upon his own premises. He was not depressed by the dulness of one or two markets, being satisfied to accumulate stock, well assured that in the course of a few months there would arise the accustomed demand for his goods. These were chiefly calimancoes, besides which a few tammies and shalloons were manufactured. The calimancoes were mostly stiff and well-glazed, and possessed durable qualities. Some specimens still extant shew them to have been woven of very stout yarn, seemingly with the intention of lasting a generation, and becoming heir-looms, as some of them have, from dame to daughter. They were sold it is stated at about twenty-five shillings a piece. The charge for weaving them, in the latter part of the century, was about five shillings a piece. In other parts of the parish shalloons were woven; like the calimancoes, they were, when compared with the fabrics of the present day, extremely coarse. As before mentioned, (page 357) it was estimated that about three thousand pieces of stuffs were, at the beginning of the century, brought weekly to Bradford market, where, with few exceptions, cash was the usual mode of payment. A spinner would not in those days earn above three to four shillings,



and a weaver from seven to nine shillings a week, and provisions in Bradford were, on the whole, dearer than at present. (See table at page 547, reading "beef 8d. a pound.")

Many of the stuff merchants dwelt in the metropolis, and to them were sent the goods intended for shipment; another class of merchants resided in the West-Riding, to whom the piece-makers sold by pattern their goods. Next, a large class of manufacturers vended themselves their worsted stuffs in the same manner as the clothiers of those days, "going with droves of pack horses laden with their goods to the fairs and market towns almost over the whole island, not to sell by retail, but to the shops by wholesale, giving large credit." Imagine a long file of pack horses laden with stuffs! one almost can fancy that the sound of the pack-horse bells is tingling in the distance.

With the extension of the worsted manufacture in Bradford the population and affluence of the town increased in a commensurate degree, so that the number of inhabitants in 1781 amounted to four thousand two hundred, and window duty was paid on four hundred and three houses, denoting that half the population were above the condition of cottagers. The impossibility of obtaining from the common wheel the necessary supply of yarn to meet the continually increasing demand led to the introduction in Bradford of spinning machines, which were first used there about the year 1794, by Mr. James Garnett, who set them up in the Paper Hall, High Street. (See page 329.) Soon after Mr. Garnett's spinning machines were set up, the late Mr. Robert Ramsbotham worked several of them by means of a gin horse on his premises in Kirkgate. He also, about the same time, brought into use in Bradford a combing machine which was called "Big Ben." (See page 566.)

Nearly contemporaneous with the first use of spinning machinery in Bradford (just noticed) an effort was made to build a factory here, which project excited the violent opposition of the inhabitants, who little foresaw that from factories the town would derive its future eminence, and become a "city of manufacturers."

The following are the circumstances attendant upon this attempt :—

“ An enterprising gentleman, named Buckley, (residing at the time in Bradford, but who afterwards removed to Todmorden,) formed, in 1793, the design of erecting a factory here, to be wrought by a steam-engine. The land for the building had been purchased nearly opposite the Primitive Methodists’ Chapel in Manchester road, and the respectable residents in Tyrrel street and that quarter of the town, viewed with dread the threatened infliction of such a smoky nuisance as a steam-engine. Accordingly, a number of them signed a notice, threatening Mr. Buckley with an action at law should he persist in building the mill to be wrought by steam. This proceeding had the desired effect, as Mr. Buckley, seeing such a formidable array against him, gave up his project. As the notice has been considered in the town a curiosity, and is a great topic in any conversation relative to the introduction of factories and machinery into Bradford, I give a copy, with the names subscribed.—

To Mr. John Buckley, cotton manufacturer, in Bradford, in the West-Riding of the County of York.

Take notice, that if either you or any person in connexion with you, shall presume to erect or build any steam-engine for the manufacture of cotton or wool, in a certain field in Horton near Bradford aforesaid, called or known by the name of the Brick-kiln Field, we whose names are hereunto subscribed shall, if the same be found a nuisance, seek such redress as the law will give. Witness our hands this 23rd January, 1793.

Toms. Atkinson,  
Nathl. Aked,  
John Smith,  
Isaac Willson,  
Thos. Holdgate.

Jonas Bower,  
John Rand,  
Wm. Whitaker,  
Jno. Hardy,  
Henry Wm. Oates,

Mary Laidman,  
Betty Swaine,  
Frs. Town,  
J. Lupton,  
John Aked.”

Some of the gentlemen who appended their names to this notice, were afterwards largely concerned in worsted mills erected in the town. Although the erection of factories in Bradford was thus deferred, yet the delay lasted only a short time, for in the year 1800, Messrs. Ramsbotham, Swaine, and Murgatroyd, erected one in the Holme, which was propelled by a steam engine of fifteen horses’ power. An anecdote is related which strongly and ludicrously indicates the great prejudice existing in the minds of the inhabitants (and even the respectable portion evinced the same spirit) against factories. A man had commenced conveying stones for the building of the mill, when a large number of the inhabitants assembled to prevent his proceeding to the site of it, and laid hold of the horse’s head. One of the partners (Mr. Murgatroyd) being a man of considerable prowess stripped his coat, and literally boxed the way clear, and the persons who had

assembled to stop the work, seeing his determination and probably remembering the unlawfulness of their conduct, allowed the horse and cart to proceed. Under such discouraging circumstances was the first of those structures, which have raised Bradford to its present importance among the towns of England, built.

Very soon after the rearing of this mill, others were erected in or near the town; one being built for Mr. Richard Fawcett, in Bradford, in the year 1801; another in the year 1802 for Messrs. Benjamin and Matthew Thompson; and a third built in 1803 by Mr. Rand. In these, the earliest worsted factories erected in Bradford, the spinning machinery at first was Arkwright's water-frame with little improvement. According to the best information, it appears that the throstle, though some time before introduced in the spinning of cotton and flax, was not employed in Bradford factories until about the year 1805. After this period the spinners of Bradford quickly became noted for the excellence of their yarn. It may be mentioned that the Bradford weavers received, at the commencement, with any thing but favour mill-spun yarn, and the first of this description of yarn brought to Bradford by the late E. C. L. Kaye, Esq., from Addingham, excited some uncomplimentary jokes from the waggish manufacturers of that day. The improvement of the mill-yarn, and the use of the false slay, rendered it, however, in a few years far preferable to hand-spun yarn.

From the date of the introduction of machinery the worsted industry of Bradford began to increase very rapidly, and the last trace of the woollen manufacture, which had hitherto lingered in the town and outskirts, disappeared, the clothiers becoming stuff weavers. Halifax, up to the close of last century, might be considered the chief mart and centre for worsted stuffs; but owing to the backwardness of its manufacturers to adopt early the factory system, and their divided attention to other branches—the woollen and cotton—they allowed Bradford gradually to become the chief seat of the worsted trade. Although at the commencement of the present century, Bradford is mentioned in the "Picture of



England," published in 1804, as possessing "a flourishing trade in shalloons, everlastings, and other worsted stuffs," yet it must not be supposed that it was of any considerable extent. Assuming, as stated in a previous page, three thousand pieces were weekly sold in its market, it is evident that the trade of the town and district could not be a very important one; for at the present day a single manufacturer will weekly produce and bring to the market, as many pieces as the whole number then woven in the Bradford district. But it must not be forgotten that this district was very limited, for the stuff manufacturers of Wilsden, Haworth, and other remote parts of the parish repaired to Halifax, and did not attend Bradford market till long afterwards.

From the year 1810 to 1820 the growth of Bradford trade and population had been extraordinary. Factories were multiplied, the population had nearly doubled itself. The Piece Hall presented a most animated and busy scene on market days, being frequented now by numerous manufacturers who had formerly attended Halifax Piece Hall to dispose of their stuffs. Its spinners ranked among the most enterprising and intelligent of their class. About the year 1818 they especially began to make great improvements in spinning machinery to meet the increasing demand for fine yarn, and to work up wool of a shorter and finer fibre than that which had hitherto alone been adapted to the state of the manufacture. The prosperity of Bradford from this date continually increased, until the memorable year 1825, when the trade of Bradford stood in so flourishing a condition that the manufacturers resolved to celebrate the septennial festival of Bishop Blaize, the patron saint of the worsted manufacture, with unusual splendour. In 1811 and 1818 the festival had been accompanied with considerable pomp and shew, as also at preceding commemorations; but when compared with that of 1825 they sink into insignificance, and as it was the last commemoration of the kind in the town, and the proceedings were highly interesting and closely connected with the subject of this work, the following narrative of them is extracted from the History of Bradford:—

"I need not particularly recur to the tradition occasioning these displays in honour of the Bishop, who

—————o'er Vulcanian stoves,  
With tepid lees of oil and spiky combs,  
Shew'd how the fleece might stretch to greater length,  
And cast a glossier whiteness.  
Hence the GLAD CITIES OF THE LOOM his name  
Honour with yearly Festivals; and thro' the streets  
The pomp, with tuneful sounds and order just  
Denoting labour's happy progress, moves—  
Procession slow and solemn.

*Dyer's "FLEECE."*

Although the sister towns in the worsted and woollen trade, have from time to time celebrated the septennial festival of the inventor of wool-combing with due honours, yet the memory of the Bishop has been commemorated with greater splendour here than in any other town in the kingdom,—especially in 1825. As it appears probable that the honours then paid to the wool-combers' Saint will be the last of the kind rendered here, (two septennial periods having since elapsed without any display,) I shall give an account of them.

The weather being very fine, at an early hour in the morning the surrounding towns and villages began to pour in their population. On no occasion within the memory of living persons were the streets of Bradford so densely thronged. About eight o'clock in the morning, the persons intending to form part of the procession began to assemble in Westgate; and shortly before ten o'clock, under the superintendence of Mr. Matthew Thompson, were formed in the following order:—

Herald, bearing a flag.

Twenty-four Woolstaplers on horseback, each horse caparisoned with a fleece.

Thirty-eight Worsteds-Spinners and Manufacturers on horseback, in white stuff waistcoats, with each a sliver of wool over his shoulder and a white stuff sash: the horses' necks covered with nets made of thick yarn

Six Merchants on horseback, with coloured sashes.

Three Guards. Masters' Colours. Three Guards.

Fifty-six Apprentices and Masters' Sons on horseback, with ornamented caps, scarlet coloured coats, white stuff waistcoats, and blue pantaloons.

*Bradford and Keighley Bands.*

Macebearer, on foot.

Six Guards. KING. QUEEN. Six Guards.  
Guards. JASON. PRINCESS MEDEA. Guards.

Bishop's Chaplain.

BISHOP BLAIZE.

Shepherd and Shepherdess.

Shepherd-Swains.

One hundred and sixty Woolsorters on horseback, with ornamented caps and various coloured slivers.

Thirty Comb-makers.

Charcoal Burners.

Combers' Colours.

*Band.*

Four hundred and seventy Wool-combers, with wool wigs, &c.

*Band.*

Forty Dyers, with red cockades, blue aprons, and crossed slivers of red and blue.

Just before the procession started, Mr. Richard Fawcett, who was on horseback at the head of the spinners and manufacturers, pronounced, uncovered, the lines in the under-mentioned note,\* which it had long been customary to repeat on the festival of Bishop Blaize.

The procession started about ten o'clock, and proceeded through the principal streets and roads of the town; and did not disperse till about five o'clock. The whole cavalcade reached upwards of half a mile. Several splendid and well-painted flags were displayed.

The person who figured as the "King" in the procession, was an old man named William Clough, from Darlington, who had sustained the part on four previous occasions. Jason was personated by a John Smith. The fair Medea rode by his side. Bishop Blaize was represented with becoming gravity by another John Smith, who had, too, borne the pastoral crook on several other commemorations. His chaplain was James Beetham.

The ornaments of the spinners and manufacturers had a neat and even elegant appearance, from the delicate and glossy whiteness of the finely-combed wool which they wore. The apprentices and masters' sons, however, formed the most showy part of the procession: their caps being richly ornamented with ostrich feathers, flowers, and knots of various coloured yarn; and their stuff garments formed of the gayest colours. Some of these dresses were very costly, from the profusion of their decorations.

\*" HAIL to the day, whose kind auspicious rays  
Deign'd first to smile on famous Bishop Blaize!  
To the great author of our combing trade  
This day's devoted, and due honours paid  
To him whose fame thro' Britain's isle resounds,—  
To him whose goodness to the poor abounds.  
Long shall his name in British annals shine,  
And grateful ages offer at his shrine!  
By this, our trade, are thousands daily fed;  
By it supplied with means to earn their bread.  
In various forms our trade its works imparts;  
In different methods and by different arts  
Preserves from starving, indigents distress'd;  
As combers, spinners, weavers, and the rest.  
We boast no gems, nor costly garments vain,  
Borrowed from India or the coast of Spain;  
Our native soil with wool our trade supplies,  
While foreign countries envy us the prize.  
No foreign broil our common good annoys,  
Our country's product all our art employs;  
Our fleecy flocks abound in every vale,  
Our bleating lambs proclaim the joyful tale.  
So let not Spain with us attempt to vie,  
Nor India's wealth pretend to soar so high;  
Nor Jason pride him in his Colchian spoil,  
By hardship gain'd and enterprising toil;  
Since Britons all with ease attain the prize,  
And every hill resounds with golden cries.  
To celebrate our founder's great renown  
Our shepherd and our shepherdess we crown;  
For England's commerce, and for George's sway,  
Each loyal subject give a loud Huzza! Huzza!"



The shepherd, shepherdess, and swains were attired in bright green. The wool-sorters, from their number, and the height of their plumes of feathers, which were mostly of different colours, formed in the shape of a *fleur-de-lis*, had a dashing appearance. The comb-makers carried before them the instruments here so much celebrated, raised on standards, together with golden fleeces, rams' heads with gilded horns, and other emblems. The wool-combers were neatly dressed, and looked mighty wise in their odd-fashioned and full flowing wigs of combed wool; and the garb of the dyers was quite professional.

Two or three months after this commemoration, commenced the memorable combers and weavers' strike, followed next year by the great commercial panic (a narrative of both is given in the preceding pages) which for a time prostrated the trade of the town; but in a year or two the invincible energy of the spinners and manufacturers raised it to a more flourishing condition than before. To free themselves from the intolerable conduct of the combers and weavers, combing machines and power-looms were speedily brought into the service of the trade. Platt and Collier's newly invented combing machines being found eligible for working up long and coarse wool, were set up in the town without any obstruction. But a most determined opposition and riot arose upon the attempt being made to weave stuffs by power-looms. Hitherto these machines had not even been used to any great extent in the cotton manufacture. In a previous page it has been mentioned that one Warbrick, of Bradford, constructed a power-loom for worsted, and that afterwards a number of them were set up in Messrs. Horsfall's mill, in Bradford, which occasioned an attack by a riotous mob upon the mill, with the intention of destroying the machinery. The affair is thus described in the History of Bradford:—

In the unhappy commotions of Luddism, in 1812, I do not find that Bradford bore any share, although distress was very prevalent among its operatives. It seems to have been also free from the disturbances of 1820. The spirit of Luddism partially broke out in the neighbourhood in 1822. In May, 1826, however the workmen manifested a determined disposition to destroy machinery for weaving, which had been introduced into the town. On the first of that month, in the afternoon, a meeting of unemployed workmen took place on Fairweather-green, near Bradford. The number of persons assembled amounted to about two hundred and fifty; who, after consulting together some time, proceeded at five o'clock in the afternoon to the mill of Messrs. Horsfall, situated at North-wing, which

contained a number of power-loom for weaving stuffs, and commenced a partial attack upon the mill, but without doing any mischief except breaking the windows. They then proceeded to Bradford-moor, where they were joined by about two hundred more, and with this reinforcement they returned to the mill, and made a second attack between eight and nine o'clock; but the riot act being read, the mob after a time separated. This was on the Monday, and all remained quiet until the Wednesday, when another public meeting was held on Fairweather-green, far more numerous than that on the Monday; and after forming in several groups till about twenty minutes past three, they again moved in a body to Messrs. Horsfall's mill, where they arrived a little before four. They began throwing stones as before. The squares which were broken on the Monday, about two hundred and forty in number, had since been glazed. They continued the attack about half an hour, when they had completely demolished three of the windows—stanchions, frames, and everything connected with them. But on the preceding day, iron bars had been fixed in front of the low windows; and as the doors were secured by three-inch planks, it was next to impossible to force an entrance. At half-past four, Colonel Plumbe Tempest, accompanied by a number of special constables, appeared on the ground adjoining the mill, and read the riot act. The mob still shewed no disposition to disperse, but continued throwing stones. All other efforts hitherto adopted proving unavailing, and one of the mob having fired a pistol into the mill, the persons who were defending it, amounting to about forty, fired from twenty to thirty shots upon the mob, by which two persons were killed, viz., Jonas Barstow, of Queen's Head, aged eighteen years, and Edward Fearnley, of Bradford, a boy thirteen years of age; and a considerable number wounded. The mob soon afterwards dispersed. Two of the rioters were sent to York Castle.

This foolish attempt against machinery only stimulated the Bradford manufacturers to extend the use of power looms, and soon there were considerable numbers in the town, and a great impulse was, in a few years, given to the trade of Bradford by their use. There has been among the operatives of Bradford no other outbreak worthy of notice, with the exception of the plug-drawing riots of 1842, when two or three hundred misguided people attempted to stop the running of the mills, by drawing the plugs of the steam-engine boilers; but they were dispersed before much damage had been effected.

To the spinners of Bradford at this period (1826) much of the prosperity of the town is owing. They were always on the alert to improve the quality of their yarn and economise the cost of production. As before noticed, Bradford was one of the first places where the fine and short-fibred wool of South Downs was spun into worsted yarn. The spinners experienced great difficulty in preparing and combing

this wool; and curious anecdotes are related that some of them spent weeks in private rooms with locked doors, making experiments, with the aid of skilful combers, to obtain their object. Eventually these experiments were successful, and the fine thread spun from South Down wool, and that of the Merino, greatly added to the reputation of the Bradford spinners, who readily sold it at high prices, a large portion being purchased for the manufacture of Thibet shawls. For weaving of merinoes, first brought into use in Bradford, (see page 418) the consumption of this fine yarn was considerable. Merino stuffs for years gave fortunes to numerous Bradford manufacturers, and these goods are still made in small quantities in the town.

Nothing was now required for the full development of Bradford manufactures, except a larger supply of fine wool, adapted for the delicate textures which the public taste required; and after overcoming many difficulties the spinners of Bradford began, about the year 1828, to use Australian wool. As one of the first who spun fine yarn from this wool, may be mentioned John Wood, Esq., of the firm of Wood and Walker.

Many as are the important eras in Bradford trade, the most important may be dated from the time of the introduction of cotton warps, which essentially changed the character of the worsted stuffs, and gave the manufacture an extension unknown before. The particulars of this change have been so fully described in the preceding pages, that it would be mere repetition to further allude to the subject, except to impress upon the mind of the reader that henceforward the town became peculiarly the centre for manufacturing mixed stuffs, in which it is without a rival. Soon after the use of cotton warps became prevalent, Bradford entered with more success into the fancy trade, and ever since, its manufacturers have produced in that department a greater variety of beautiful figured stuffs.

Henceforward the trade of Bradford has been, on the whole, one of great prosperity and success, chequered by a few years of discouragement. It were superfluous to further



allude to these, or to the yearly state of the trade of the town, because the reflex of its trade is that also of the whole worsted manufacture, and may be fully gathered from the general history contained in the preceding pages.

Formerly, the wool market for both the clothiers and stuff makers, was held at Wakefield, but for many years past Bradford has been the great wool mart of the north of England. Hither is brought the greater portion of the wool used in the clothing and stuff manufacture, where, after the long wool has been sorted out, the short wool, and also such parts as remain after the long wool has been combed, termed *noils*, and not adapted to the worsted trade, are bought by the woollen manufacturers of Leeds, and the populous clothing villages of Heckmondwike, Gomersal, Calverley, Pudsey, Stanningley, Dewsbury, and other places, and made into inferior woollen fabrics. From Bradford market the spinners of other districts likewise obtain the chief portion of their wool.

Two causes have materially conduced to the extension and prosperity of Bradford, namely, the erection of dyehouses in the town and neighbourhood, and the settlement of foreign and home merchants in the place. About sixty years ago there were only two dyehouses in the town and immediate vicinity,—“Bowling dyeworks and Peel’s,” near where Thornton road has since been made. The Bradford stuffs were mostly purchased by the merchants of Leeds and other neighbouring towns in the grey, and dyed and finished there. Twenty years since a great impulse was given to the dyeing branch in Bradford, and henceforward the Bradford dyers have been ranked among the most distinguished in the kingdom. In the earlier portions of the century two or three home merchants resided in Bradford, but their business transactions were upon a very limited scale. It is universally admitted that the great growth of the merchant system here, is, in a great degree, owing to the ability and enterprise of Henry Forbes, Esq., and to him Bradford is much indebted. The Leeds, Manchester, and other merchants, found that

they could not successfully compete with the Bradford merchants, who were on the spot, and therefore removed their establishments hither; and thus began the system which has tended to centralize the whole trade in Bradford, from the purchase of the wool, to the buying and selling of the stuffs woven therefrom. Foreign merchants began to settle here so long as thirty years ago; and now form a considerable colony, very deserving of the encomiums which have been bestowed, at page 411. The numerous merchants and manufacturers' warehouses, which have of late years been erected in Bradford, may vie in external architecture with the most splendid of their kind in the kingdom. They are indeed palatial structures, and have added greatly to the appearance of the town.

In these warehouses the sales of stuffs are, on market days, made with a dispatch and quietness, which is astonishing to an uninitiated beholder. On the principal market day (Thursday) there is a large assemblage of manufacturers in the town, but no great bustle is apparent, each being engaged in his own warehouse dealing with the merchants; but between twelve and one o'clock there is a general gathering at the Exchange Rooms,\* (similar to that at Manchester Exchange) before adjourning to dinner, at the hour of one precisely. At half-past two, business is re-commenced. Until of late years the sole market at Bradford for stuffs, was held on the Thursday. Then there sprung up a kind of market for wool and yarn on the Monday, and now a great number of pieces change hands on that day.

A Chamber of Commerce, established in the year 1851, for Bradford and the worsted district, and comprising among its members the most influential manufacturers, has rendered many valuable services to the trade.

\* The Exchange Buildings, erected at a cost of £7,000, in 1828, were then a great acquisition to the town, but now they are totally inadequate either in appearance, or convenience, to the wants of those frequenting Bradford market; and it is to be hoped, that from the public spirit of the town, and of the neighbouring manufacturers, there will, ere long, arise a building in all respects worthy of this vast and important manufacture. The best site now available for this purpose, seems to be that of the Manor House.

If it be inquired what description and variety of goods are made at Bradford, a glance at the list printed at page 582, will suffice to satisfy the inquirer that every kind of stuff is there manufactured. It is, however, chiefly noted for the finer sorts of mixed stuffs, such as orleans and cobourgs, in the fabrication of which it is unrivalled by the world. Some few entire worsted goods (merinoes, plainbacks, &c.) are still made at Bradford, but not to any important extent. The large establishments at Saltaire, and at Black Dikes, Queen's Head, both in this district, work up most of the Alpaca and Mohair consumed in the kingdom. In Bradford district also, most of the worsted yarn exported, is spun. Besides a large and important trade is carried on at Bradford in spinning worsted yarn, for supplying the manufactures of Norwich, the fancy trade of Huddersfield, and the shawl trade of Paisley and Glasgow.

The following remarks on Bradford trade, have been furnished by a manufacturer :—

“I may be excused offering a few remarks respecting this trade generally, and the extreme cheapness, combined with the general excellence of the goods, which are now produced by the manufacturers of this district.

Every variety of ladies' dress goods, checked in coloured worsted and mohair, or cotton and silk, can be ordered or purchased from the Bradford manufacturers at most moderate prices, whilst for its staple articles of orleans and cobourgs, this town has undoubtedly, and deservedly, the highest reputation of any in the world. In the variety and general excellence of its productions, this district certainly rivals any other manufacturing town with which we are acquainted.

There are, however, unfortunately some severe evils which afflict our trade, to to which I would briefly refer, and the contemplation of which is truly painful,—these consist in the perpetual deterioration of our manufactures—the decreasing width and substance, the practice of what is termed ‘cutting’—and the inveterate and discreditable habit of copying a brother manufacturer's styles and designs, and producing the same continually, in an inferior cloth. To such a degree does this practice prevail, and so much encouragement does it meet with from merchants, that they themselves are in continual fear of its effects, whilst the manufacturer is in as perpetual dread of the same ruinous piracy. Nothing about the Bradford trade is more surprising than to remark the difference between the cost of goods now and a few years ago; fifteen years ago, the lowest priced piece we produced would be worth some forty shillings for twenty-eight yards, now we produce a cloth called respectable, at fifteen shillings for twenty-eight yards, and we do not know what it is to make a cloth at as high a price as forty shillings for twenty-eight yards. I have recently seen very good cloth which had been made to order for one of our extensive merchants, at ten shillings and seven-pence half-penny for forty-eight yards. A strange contrast this affords to the prices of our goods twenty years ago.”



Comparatively very few pieces are now woven by hand in Bradford parish. On turning to page 482, it will be observed, that in 1838, nearly ten thousand hand loom weavers were employed in the parish; but they were a very ill-paid and indigent class, struggling ineffectually against that never tired, all powerful drudge, the steam engine. The small manufacturers, who, (alternately following with their families the labours of the loom and agriculture) a few years since thickly inhabited the countless detached houses with which the slopes of Bradford parish are covered, and make it appear almost like one vast town, are quickly disappearing; their children having exchanged the domestic loom for the labours of the neighbouring mills. Alas! many of them recollect, with sorrowful emotions, the looms of their fathers' hearths, though the wages they now earn, and the comforts of life which they enjoy, make the change, in many respects, a desirable one.

The like may be observed of the hand combers, who have for years been battling with the combing machine.\* Very little hand combing is now carried on in Bradford, Lister's invaluable machine having superseded it, whilst the saving both in labour and material has very much reduced the cost of producing stuffs.† Combers, owing to their former pursuits have, in great numbers, been drafted into the factories and merchants' warehouses, where their condition is improved, for they earn better wages, and the work is not so laborious as that of combing.

\* Formerly hand combing was done in a very inferior manner, and three-pitch combs were only used; four-pitch being considered as very high; but after the introduction of fine-stapled wool into the worsted business, the pitch was increased, so as in some sorts to be as high as seven. At first it was thought a high pitch would reduce the quantity of top, but it has been found to have a contrary effect.

† Where machinery is so extensively employed, it may naturally be inferred, that the making of it forms one of the staple branches of industry of the town. Combing, spinning, and weaving machines of the most improved and complicated construction are made in Bradford to a large extent, where "the makers exhaust the science of mechanics, and employ all its manœuvres for directing power and rendering it effective." Lately there have been established at Shipley Fields, by Mr. Perry, works for preparing teeth for combing machines and gills, by a most ingenious process.

Perhaps there cannot be a better index of the relative growth of the manufacture in Bradford, than the drawback accounts ; for they are very correct measures of the quantity of wool worked up in the town. The following table exhibits the number of pounds weight of wool consumed here for more than forty years :—

YEAR.	LBS.	YEAR.	LBS.
1810	1,633,920	1835	11,569,920
1815	2,136,960	1836	12,295,680
1820	4,629,120	1838	12,168,950
1822	4,060,640	1839	13,580,100
1825	6,382,080	1840	12,124,400
1828	8,386,460	1845	19,848,960
1830	10,095,260	1850	21,121,280
1831	12,357,120	1853	23,650,560
1834	10,156,320		

It is thus shewn, that, in a period of little more than forty years, the consumption of wool in the town had increased fourteen times its former amount—an enormous growth!

But nothing shews the paramount importance of Bradford in this branch of national industry, and its just title to be termed the capital of the worsted manufacture, better than a comparison of the quantity of wool consumed in Bradford, and the other seats of the manufacture in the West-Riding. The amount of drawback claimed by the Bradford manufacturers, in 1850, exceeded one-fourth of the whole of that claimed by the West-Riding, and was equal to that of both Halifax and Keighley.

					lbs.
Bradford	..	..	..	..	21,121,280
Halifax	..	..	..	..	14,423,040
Keighley	..	..	..	..	5,948,160

It must be remembered, too, that Halifax trade is chiefly in heavy goods, such as damasks, made altogether of wool; whilst that of Bradford lies chiefly in mixed fabrics, where the warps are altogether of cotton or silk.

The increase of the factory system in Bradford and its parish, is exhibited in the following statistical details, which

also afford a view of the extension from time to time of the manufacture here. There were in the borough of Bradford in the year 1810, five mills with motive power of about 120 horse power; in the year 1815, ten mills of about 250 horse power; in 1820, twenty mills of about 538 horse power; in 1825, twenty-six mills of about 706 horse power; and in 1830, thirty-one mills of about 862 horse power. They had increased in the year 1833, to thirty-four mills\* in the borough

\* Some particulars respecting these mills are thrown together in this Note. The numbers refer to the next Table. :—

*Bradford.* 1.—Holme mill, built in 1800, was, as before stated, the first mill erected in Bradford. It was soon after burnt down, re-erected in 1803, and occupied by its owners, Messrs. Ramsbotham & Swaine. They sold it soon after to Mr. Richard Fawcett, who occupied it until about 1832. He added to it in 1830 a new mill. 2.—This mill was erected by Mr. Peile, a dyer, at two different periods, being in fact two mills. 3.—Union Street mill, built by Mr. Richard Fawcett, and occupied by him until about the year 1832. The mill built in 1830 adjoins to the other, and was erected by Messrs. Illingworth & Murgatroyd. 4.—Laister Dyke mill was originally a woollen mill, belonging to Mr. Roberts, and was converted into a worsted mill about the year 1809, and occupied by Messrs. Pearson, Whitehead, & Holmes. 5.—These mills were erected and occupied by Mr. John Wood in 1812, &c. 6.—This mill was built and occupied by Mr. John Mason. 7.—Built by Messrs. Pearson & Whitehead, and occupied by them for a considerable period. 8.—Built by Messrs. William and James Garnett. 9.—Built by Mr. George Anderton, and occupied by him. 10.—This mill, at the bottom of Southgate, was originally a woollen mill, and converted to a worsted mill about 1816. 11.—Union Street mill was built by Messrs. Wroe, and occupied by them; purchased in 1830 by Messrs. Garnett. 12.—Pit Lane mill, built by Mr. Benjamin Farrer. 13.—Built and occupied by Mr. Thomas Holdsworth. 14.—Built and occupied by Mr. Samuel Margerison. 15.—Built by Mr. Bates. 16.—Built by Messrs. Horsfall, and occupied by them. 17.—Built by Mr. E. C. Lister, and occupied by Mr. S. Hattersley and others. 18.—Built and occupied by Messrs. William Rouse & Son. 19.—Built and occupied by Thomas Atkinson. 20.—Built and occupied by Michael Billingsley. 21.—Converted from a woollen mill by the Junction Mill Company about the year 1833. In a year or two after they erected a new mill.

*Horton.* 1.—Messrs. Rands' mill was built and occupied by the late Mr. John Rand, and is the only mill in Bradford, or its parish, which for so long a period has been occupied by the same family. 2.—Built and occupied by Richard Smith. 3.—Built by Mr. James Marshall for his Sons. 4.—Built by Mr. E. C. Lister. 5.—Built by Joseph Beanland, and first occupied by Messrs. Knight and Co. 6.—Built by Mr. James Duckitt. 7.—Built by Mr. E. C. Lister, and occupied by Mr. Thomas Ackroyd. 8.—Built by Eli Suddards. 9.—Built and occupied by Samuel Cannon. 10.—Built by Mr. Stockdale. 11.—Built by Mr. John Knight and others, for a cotton mill, converted into a worsted mill in 1827.

*Bowling.* 1.—Built by Messrs. Sturges & Co. 2.—Built and occupied by Messrs. Terry.



of Bradford, with fifty-four engines of 1,148 horse power. These mills were distributed thus :—21 mills in the township of Bradford, of 799 horse power ; 11 in the township of Horton (that is Little and Great Horton) of 297 horse power ; and two in Bowling, with 52 horse power.

## BRADFORD TOWNSHIP.

WHEN BUILT.	SITUATION.	OCCUPIERS IN 1833.	HORSE POWER.
1800-30	Holme Mill	Milnes & Dewhirst	36
1801-2	Thornton Road	Matthew Thompson	20
1807-30	Union Street	Illingworth, Murgatroyd, & Co.	60
1809	Laister Dyke	Joseph Holmes	15
1812-24-33	Wakefield Road	Wood & Walker	184
1813	Canal Side	John Mason	16
1815	Laister Dyke	William Pearson & Son	30
1815-23	Barker End	R. J. & W. Garnett	45
1815	Canal Side	{ Wm. Rouse & Sons. James Wade & Son.	40
1816	Southgate	J. & E. Smith	15
1818	Union Street	R. J. & W. Garnett	38
1819	Pit Lane	Swithin Anderton	15
1820	Canal Side	Christopher Waud	20
1821	Canal Side	Margerison & Peckover	40
1823	Canal Side	Lockwoods & Rhodes	20
1824	Wapping	Horsfall Brothers	36
1824	Thornton Road	John Anderton & Co.	16
1824-26	Canal Side	William Rouse & Sons	76
1826	Silsbridge Lane	Thomas Hollings & Sons	40
1831	Bradford Moor	Billingsley & Tankard	10
1833	Bradford Moor	Joseph Dalby and others	27

## HORTON TOWNSHIP.

1803	Little Horton Lane	John Rand & Sons	45
1817	Manchester Road	Turner & Mitchell	34
1818	Manchester Road	Berry & Co.	40
1819	Manchester Road	F. & J. Mitchell	20
1820	Cliffe Mill	R. S. Ackroyd	16
1820	Nelson Street	Aked & Co. Chapman & Co.	40
1820	Great Horton	Denton & Co.	16
1821	Great Horton	Cousen & Son	20
1826	Great Horton	S. Cannon	20
1827	Bowling Beck Side	Cousen, Leach, & Co.	30
1827	Great Horton	Cowling Ackroyd	16

## BOWLING TOWNSHIP.

1819	Prospect Mill	Addison & Roper	30
1833	Dudley Hill	W. & J. Terry	22

This Table has been prepared from various sources but chiefly from private information : some particulars respecting

other mills in the parish have been collected in the note below.\*

Number of worsted mills, horse power, and hands employed in the *parish* of Bradford, in 1835 :—

NO. OF MILLS.	STEAM-ENGINE HORSE POWER.						WATER-WHEEL HORSE POWER		TOTAL HORSE POWER.
	50 & above	49 to 40	39 to 30	29 to 20	19 to 10	under 10	19 to 10	under 10	
73	260	160	440	296	229	70	97	95	1647

Number of persons employed in these mills :—

CHILDREN BETWEEN 9 & 11.	YOUNG PERSONS BETWEEN 11 & 18.	TOTAL NUMBER OF HANDS.
476	4,586	7,540

In 1835, the steam power employed in propelling the machinery in the mills of the borough, amounted to 1,388 horses' power, and the number of hands to 6,022.

The Parliamentary return of 1838 shews that in the *parish* of Bradford there were 142 worsted *firms*,† also 87 engines of 2,059 horse power, and 20 waterwheels of 113 horse power, employing 1,597 children between nine and thirteen years of age, and 4,890 young persons between thirteen and

\* The following extracts are from Returns sent to the Factory Inspectors in 1834, of mills in other portions of the parish of Bradford; but it is evident that Returns had not been sent respecting *all* the mills there.

*Eccleshill.* Mill occupied by Scott & Hutton, built in 1820, 8 horse power.

*Haworth.* Bridge mill occupied by John and James Greenwood, erected about 1793, 16 horse power.

„ Mill occupied by Butterfield & Co., built about 1800, 10 horse power.

„ Oxenhope mill occupied by William Greenwood, built about 1807, 8 horse power.

„ Royd House mill occupied by Jonas Hird, applied to worsted in 1819, 8 horse power.

*Shipley.* Red Beck mill occupied by John C. Lister, 12 horse power.

„ New Hirst mill occupied by Jos. Rayner, built in 1820, 10 horse power.

*Thornton.* Leventhorp mill occupied by Joseph Fairbank, 6 horse power.

„ Mill occupied by David Wright & Son, built in 1826, 36 horse power.

*Wilsden.* Hewnden mill occupied by Rich. Nicholls, built in 1792, 10 horse power.

„ Mill occupied by Messrs. Anderson, built in 1810, 10 horse power.

† There seems to be an error in the Parliamentary Return set out at page 487, which evidently contains the mistake of setting down *mills* for *firms*.

eighteen years of age; the total number of hands employed in these mills being 10,896.

Number of worsted factories, with amount of horse power, and number of persons employed therein, in the *parish* of Bradford in 1841:—

Allerton.. .. 1	Clayton .. 4	Haworth .. 19	Thornton .. 4
Bradford .. 38	Eccleshill 1	Manningham 3	Wibsey .. 1
Bierley .. .. 1	Great Horton 9	Shipley .. 5	Wilsden.. .. 9
Bowling .. 4	Little Horton 13		

Number of steam engines and water wheels:—

ENGINES.	HORSE POWER.	WATER WHEELS.	HORSE POWER.
88	2,059	20	87

Number of persons employed:—

FROM 9 TO 13.	FROM 13 TO 18.	TOTAL.
1,597	4,890	10,896*

In the borough of Bradford, there were, in 1841, the following number of worsted mills, &c.:—

	NUMBER OF MILLS.	NUMBER OF OCCUPIERS.	NUMBER OF STEAM ENGINES.	HORSE POWER.
Bradford .. ..	38	57	49	1202
Little Horton ..	13	24	14	480
Great Horton ..	9	11	9	194
Bowling . ..	4	13	4	98
Manningham .	3	4	4	84
	67	109	80	2058

Persons employed in the above mills:—

FROM 9 TO 13.		FROM 13 TO 18.		ABOVE 18.		TOTAL.
MALES.	FEMALES.	MALES.	FEMALES.	MALES.	FEMALES.	
504	899	929	3,160	462	4,456	10,410

\* There were also in the parish of Bradford six woollen mills, three at Eccleshill, and three at Shipley; and two cotton mills, one at Haworth, and another at Wilsden; the woollen mills were moved by five engines of one hundred and fifty horse power, and employed six hundred and eighty one hands; the cotton mills were inconsiderable, employing only ninety-eight hands.



The next table exhibits the vast growth of Bradford trade in the next nine years (1850):—

TOWNSHIPS.	NO. OF FIRMS.	NO. OF SPINDLES.	NO. OF POWER LOOMS.	AMOUNT OF MOVING POWER.		PERSONS EMPLOYED.	
				STEAM.	WATER.	MALES.	FEMALES
Factories employed in Spinning:—							
Bradford .. ..	22	78,701	.. ..	493	.. ..	1,002	1,573
Little Horton ..	15	33,300	.. ..	273	.. ..	1,111	1,031
Great Horton ..	1	1,100	.. ..	12	.. ..	11	19
Bowling .. ..	6	12,100	.. ..	88	49	156	392
Haworth .. ..	12	11,842	.. ..	88	10	210	231
Wilsden .. ..	5	6,373	.. ..	64	.. ..	96	109
Wibsey .. ..	2	3,168	.. ..	22	12	36	102
Thornton .. ..	2	1,982	.. ..	6	.. ..	38	42
Manningham ..	1	1,720	.. ..	15	.. ..	15	29
North Bierley ..	1	1,200	.. ..	6	.. ..	3	39
	67	150,986	.. ..	1,067	71	2,678	3,567
Factories employed in Weaving:—							
Bradford .. ..	24	.. ..	3,271	298	.. ..	595	2,756
Little Horton ..	8	.. ..	996	97	.. ..	172	960
Great Horton ..	5	.. ..	561	46	.. ..	84	530
Bowling .. ..	4	.. ..	440	42	12	64	419
Wilsden .. ..	6	.. ..	1,313	22	.. ..	128	180
Thornton .. ..	3	.. ..	518	103	.. ..	602	1,147
Manningham ..	1	.. ..	271	20	.. ..	60	248
Shipley .. ..	1	.. ..	115	10	.. ..	21	113
Allerton .. ..	1	.. ..	50	5	.. ..	19	36
	53	.. ..	7,535	643	12	1,745	6,389
Factories employed in Spinning and Weaving:—							
Bradford .. ..	13	55,334	1,847	592	.. ..	1,737	3,125
Little Horton ..	13	70,868	2,606	662	.. ..	2,008	3,851
Great Horton ..	7	10,884	811	134	.. ..	324	925
Bowling .. ..	8	8,446	1,793	132	154	157	967
Haworth .. ..	11	24,144	014	150	10	730	1,208
Wilsden .. ..	5	16,494	500	149	.. ..	544	719
Wibsey .. ..	1	448	80	12	.. ..	16	86
Thornton .. ..	4	14,760	414	120	.. ..	392	675
Manningham ..	1	6,200	300	80	.. ..	169	382
North Bierley ..	3	6,468	695	82	.. ..	141	816
Shipley .. ..	2	5,892	424	66	.. ..	313	338
Heaton .. ..	1	3,824	222	50	.. ..	99	286
Bolton .. ..	1	3,450	62	34	20	77	118
Clayton .. ..	2	2,216	179	26	.. ..	134	181
Allerton .. ..	2	1,920	160	21	.. ..	84	143
	74	231,348	10,107	2,310	184	6,925	13,820

The subjoined Table contains a view of the present extent of factory operations in the borough of Bradford and other portions of the parish, except Thornton, Clayton, and Haworth, for which returns cannot be obtained. If the amounts for these places be taken from the last Table, and added to this, the aggregate will probably give a near approximation for the whole parish.

TOWNSHIPS.	NO. OF FIRMS.	NO. OF SPINDLES.	NO. OF POWER LOOMS.	HORSE POWER.		PERSONS EMPLOYED.
				STEAM.	WATER.	
Factories employed in Spinning:—						
Bradford .. ..	26	108,492	.. ..	646	.. ..	2,508
Little Horton ..	14	35,292	.. ..	241	.. ..	775
Great Horton ..	2	10,700	.. ..	43	.. ..	254
Manningham ..	2	6,068	.. ..	22	.. ..	140
Bowling .. ..	8	19,418	.. ..	146	.. ..	570
Allerton .. ..	1	2,160	.. ..	25	.. ..	73
North Bierley..	3	2,686	.. ..	22	.. ..	77
Shipley .. ..	1	1,552	.. ..	14	.. ..	47
Wibsey .. ..	1	1,724	.. ..	13	.. ..	55
Wilsden .. ..	6	10,060	.. ..	72	16	307
	64	198,152	.. ..	1,244	16	4,806
Factories employed in Weaving:—						
Bradford .. ..	30	.. ..	3,170	259	.. ..	2,546
Little Horton ..	18	.. ..	2,111	210	.. ..	1,801
Great Horton ..	2	.. ..	280	30	.. ..	218
Bowling .. ..	11	.. ..	1,014	94	.. ..	1,101
North Bierley..	5	.. ..	283	26	.. ..	311
Shipley .. ..	1	.. ..	70	7	.. ..	73
Wibsey .. ..	1	.. ..	33	3	.. ..	35
Wilsden .. ..	3	.. ..	260	20	10	208
	71	.. ..	7,221	649	10	6,293
Factories employed in Spinning and Weaving:—						
Bradford .. ..	8	49,160	1,690	543	.. ..	3,306
Little Horton ..	10	66,500	1,947	570	.. ..	4,243
Great Horton ..	9	27,096	1,645	237	.. ..	2,135
Manningham ..	3	13,748	702	176	.. ..	793
Bowling .. ..	6	20,144	747	164	.. ..	1,344
Allerton .. ..	1	2,400	118	25	.. ..	213
North Bierley..	1	5,500	425	80	.. ..	761
Heaton .. ..	1	3,900	182	50	.. ..	341
Shipley .. ..	4	53,532	2,102	1,200	.. ..	4,721
Wibsey .. ..	1	4,280	250	30	.. ..	239
Wilsden .. ..	7	23,004	607	208	13	1,322
	51	269,264	10,415	3,283	13	19,418

A remarkable change denoted in the preceding Table, has occurred during the last seven years in Bradford manufacture. It will be observed that whilst the operations of spinning in that period have vastly increased to supply the foreign demand for yarn, the number of looms in the town has actually decreased. Another fact is worthy of notice, that fewer hands than formerly are now employed in proportion to the number of spindles. Many of the large spinning firms have also upon their premises combing machines for their own use, whilst there are besides combing establishments in the borough worked by horse power.

To a stranger it is proper to state, that, with an exception or two, the mills set down in the preceding Tables under the head "Little Horton," are in truth in, and form part and parcel of the *town* of Bradford, though not within its township.

It is believed, that Bradford, has, owing to the rapid extension of its trade, progressed in population at a rate beyond that of any other town in England during the last fifty years. In 1801 the township only numbered 6,393 inhabitants; in 1811 they had increased to 7,767; but, in the next decennial period they almost doubled that number, and in the next interval, up to 1831, they had increased to 23,223; in 1841 to 34,560; and according to the last census, 1851, to 52,493. But the real magnitude of the town must not be estimated by these numbers, for a large portion of Little Horton, Bowling, and Manningham have long, from the increase of the dimensions of Bradford, been connected with, and formed part of the town, whilst the other portions of the borough are contiguous. It is estimated that the population of the whole town (that is such parts of the borough as are connected in one mass) now reaches at least 100,000 souls.

Enough has been written in the preceding chapter 'On the condition of worsted operatives,' to denote the sanitary, moral, and educational character of the workpeople of Bradford. Taken altogether, it will not suffer by contrast with that of the labouring population of any manufacturing town in the kingdom. A very few words will suffice to describe the Bradford manufacturers; they, without any manner of doubt,



rank among the most intelligent, industrious, energetic, and upright of their class. What has been asserted of West-Riding men, may in particular be said of them, they are very sleuth hounds in pursuit of money; but generous in spending it; hospitable even to a fault, and supporting every charity and public institution with liberality.

The words which I employed in writing of Bradford sixteen years ago, are now, with some slight variation, very applicable. It stands supremely "the Metropolis of the Worsted Trade," its hundred streets stretching their wide arms for miles; filled with an overflowing population of busy merchants and manufacturers, artizans and operatives; and the immense products of its stupendous mills—where thousands of clacking power-looms, and whirring spinning frames, din the ear—exported to almost every civilized place of the globe,

“————— to spread  
 “ Among the habitations of mankind,  
 “ The various wealth of toil, and what the fleece  
 “ To clothe the naked, and her skilful looms  
 “ Peculiar give.”—————

*Dyer.*

That Bradford, raised to a proud eminence among the manufacturing towns of the kingdom, may, so long as manufactures flourish in this our "ocean speck" (alike distinguished for arts and arms,) increasingly maintain the honourable distinction it now enjoys, is the sincere wish of one of its humble denizens—the Author.\*

\* Since the preceding pages were printed, a Commercial Directory, for 1814, has been put into my hands, in which it is shown there were thirty-six woolstaplers; three firms of worsted spinners, Thomas Atkinson; John Wood; Pearson, Whitehead, & Co.; and the following worsted spinners and manufacturers:— F. Ackroyd & Son, Richard Fawcett & Son, John Mason, Peile & Thompsons, John Rand, Richard Smith, and Smithson & Crosley. Two firms of stuff merchants are named, Messrs. Mann and William Wilson.

There was a Bank in Bradford in the year 1760, under the firm of Leach, Pollard, & Hardcastle. About the year 1802, the "Old Bank," now Messrs. Harris, was established; to these were added, in 1827, the Bradford Banking Company; and in 1833, the Bradford Joint Stock Commercial Company.

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THE GREAT BRIDGE  
OVER THE RIVER





HALIFAX.—Halifax, like Bradford, from an early date, possessed a woollen manufacture, upon which has been ingrafted that of worsted. Wright, in his History of Halifax, relates, that the woollen manufacture was brought thither from Ripon in the time of Mr. Waterhouse, who lived between the years 1443 and 1540; but there is evidence in ancient records of its having taken root in the parish anterior to the former period. Probably, as stated by several historians, foreign weavers were settled here by Henry VII., and thus stimulated trade; for it is evident, that soon after, from the spread of the woollen manufacture, the population of Halifax had grown amazingly, as will hereafter be noticed.

During the reigns of Henry VIII., and Edward VI., the clothiers of Halifax were in a flourishing condition. In the former reign, a statute had been passed, prohibiting the sale of wool in small quantities; but as this measure bore with peculiar hardship upon the poor spinners and clothiers of Halifax, it was, after some exertion, repealed by an Act of Parliament obtained in the reign of Queen Mary. In this Act there is a recital containing many interesting particulars, which, although not having strict relation to the subject of this work, will not be unacceptable to the reader, especially to an inhabitant of Halifax. It is therein stated,

“That the parish of Halifax being planted on the great wastes and moors, where the fertility of the ground is not apt to bring forth any corn nor good grass, but in rare places, and by exceeding and great industry of the inhabitants; and the same inhabitants altogether do live by cloth making, and the great part of them neither getteth corn nor is able to keep a horse to carry wools, nor yet to buy much wool at once, but hath ever used only to repair to the town of Halifax, and there to buy upon the wool driver, some a stone, some two, and some three and four, according to their ability, and to carry the same to their houses, some three, four, five, and six miles off, upon their heads and backs, and so to make and convert the same into yarn and cloth, and to sell the same, and so to buy more wool of the wool driver, by means of which industry the barren grounds in those parts be now much inhabited, and above five hundred households there newly increased within these forty years past.”

Here is a clear account of the manner in which the greater portion of the widely extended parish of Halifax was reclaimed from the waste. Nowhere in the kingdom can such a striking example be met with of the mastery of man, in changing the

aspect of a wild and desolate tract—of the benefits which the soil derives from manufactures, than in this parish. Naturally barren, except in some few spots, especially at the eastern portion, it would have lain comparatively unproductive, if the wealth derived from manufactures had not been applied to its culture. It is often seen, in traversing the wide expanse of the parish, that on the one side of the fence the purple heath flourishes in all its primitive and full luxuriance, whilst on the other, artificial grass lies as verdant as on a gentleman's lawn. On the division of the immense forest of Hardwick, in the parish of Halifax, the thrifty clothier purchased a few acres there, fixed his homestead, and successive generations have toiled to render the spot fertile.

Whilst Queen Elizabeth occupied the throne, the trade of Halifax flourished much, and the population rapidly increased. At this period, we have authentic proof of the amount of population. The before-mentioned Mr. Waterhouse related, that, when he was a child, there were only 13 houses in Halifax. In the year 1566, they had increased to the large number of 520. We may also gather a pretty correct idea of the amount of population in the parish at this time, and the increase within a few years. From a certificate of the Archbishop of York, in 1548, the number of "houselyng" people in the parish, is set down at 8,500; and twenty-six years afterwards, Camden estimates them at about 12,000. Of these a large proportion were evidently able-bodied men for Archbishop Gryndall, in a letter to Queen Elizabeth, asserts, that the parish could bring 3,000 or 4,000 able men into the field to support her against the papists.

Until the close of the seventeenth or beginning of the eighteenth century, the staple manufacture of Halifax, consisted altogether of woollens; but then, that of worsteds commenced. Watson, in his history of Halifax writes, that the shalloon trade was introduced here in the beginning of the eighteenth century, and what are called figured stuffs and drawboys, about the middle of it.

It is clear, as before stated, (see page 201) that early in that century it could not have become of much consequence,

because Bentley, in his *Description of Halifax*, published in 1708, though mentioning the cloth manufacture as forming the great staple trade of Halifax, does not allude to that of worsteds. Such a circumstance, though not conclusive, renders it probable, that the latter had not become sufficiently important to be noticed.\* But in De Foe's tour round Great Britain, there is indisputable evidence, that the shalloon trade had grown to some magnitude, and had trenched upon the ancient trade.† It is evident that early in the last century, the worsted manufacture prevailed in the remote parts of the parish, for in Mann's *Life of the Rev. William Crabtree*, Baptist Minister, at Bradford, born in Wadsworth, in 1720, it is stated that he (Crabtree) was early put apprentice to a shalloon weaver. He gave an awful account of his fellow worsted weavers at that date. He says, "I was boarded in a wicked village, next door to hell itself, given to Sabbath breaking, drunkenness, profane cursing and swearing;" and he adds, that "out of every piece weft they stole so many hanks." A sufficient proof that the embezzlement laws were required.

At page 280 will be found an elaborate account of the cost of producing a piece of worsted stuff, in the parish of Halifax, in the year 1771, and the price of labour there.

The next notice we have of the stuff manufacture of Halifax, is in Pennant's *Tour to Scotland*, where he alludes to shalloons, everlastings, (for Portugal) and says of a deep

\* Most likely the manufacture was introduced into Halifax parish in the latter part of the seventeenth century, but for many years was so unimportant, as not to attract much attention.

† The Edition of 1738 after noting (page 140) that there was a great demand for kerseys for clothing the armies abroad, proceeds:—"Some maintain it [trade] is increased a fourth at least within these fifty years, which is not improbable, for they have entered upon a new manufacture of shalloons, which were never made in these parts before, at least not in any quantities; and it is computed that 100,000 pieces are worked up in this parish only, and yet they do not make much fewer kerseys than they did before; for I was assured that there was one dealer in the Vicarage, who traded by commission for £60,000 in kerseys only, to Holland and Hamburgh. And of late years it is still more increased by the people of a neighbouring part driving away about 4,000 Irish manufacturers, who, with about 2,000 others settled there."



blue colour for Guinea, being in the list of articles made here. (See page 290 *ante*.)

When the worsted trade of Halifax began to extend, may be gathered from the date of the erection of its Piece Hall, in 1779. This is a large and imposing structure, and by it may be measured the importance of Halifax trade at the date of its erection. It is a quadrangular stone structure, occupying an area of more than two acres. The building is one hundred and ten yards in length and ninety-one in breadth, with a rustic basement story on square *cippi*, and above, two stories on the West side, and three on the East. The upper stories are fronted by entire colonnades, within which are arcades connecting the manufacturers' rooms, numbering in the whole three hundred and fifteen; these are fire-proof. The centre of the quadrangle consists of a grass-plot. For a long term this Piece Hall on market days exhibited a busy scene. Thither resorted the numerous stuff manufacturers of Halifax wide parish, besides those from Keighley and Colne, and also from Haworth and some other portions of Bradford parish; but the glory of Halifax Piece Hall has departed. A few straggling piece makers may yet, on Saturdays, be here and there observed within its portico, lingering round the spot where they have been accustomed to resort; but most of the Halifax manufacturers now carry their goods to the great mart of worsted industry—Bradford market.

One of the main causes which contributed to give Bradford the start of Halifax in the race of competition, and finally altogether to distance the latter, arose from the early adoption in the town of Bradford of the factory system, and its full and free development there. Besides, in the parish of Halifax the woollen and cotton businesses were carried on extensively, so that the energies of the inhabitants were directed to many branches. The following statements prove the importance of Halifax in the last century. In the year 1738 there were 1,100 families in the town, which at 5 to a family gives a population of 5,500; and in 1764 the number of families amounted to 1,272, comprising (say) 6,360 souls, a very much larger number than Bradford contained. At the same

date, the number of inhabitants in the parish of Halifax may be estimated at 41,220. Most of these, in some manner or other, gained their livelihood from the woollen or worsted manufacture. The latter comprised shalloons, says, tammies, serges, calimancoes, everlastings, &c., and were produced in large quantities, so that until the early portion of the present century Halifax stood at the head of the worsted manufacturing seats in the North of England.

But when the factory system began to be introduced into the worsted business, Halifax betrayed the same apathy to it, as Norwich did in more recent times, and thus lost the vantage ground, it had formerly, by great enterprise and labour, obtained. Within the last few years the town has, however, through the influence of two or three spirited manufacturers, somewhat retrieved its former fame, and made rapid strides towards regaining, if not its former paramount position, a place among the great manufacturing towns of the kingdom.

To Halifax the worsted manufacture owes much, for originating many new articles, and improving the old ones. At page 374, the introduction of plainbacks is noticed, which imparted a powerful impulse to Halifax trade. Immediately afterwards 'dobbies' were brought into Halifax market, and for many years were in great favour with the public, and not without good cause, for the patterns still extant shew that the fabric was produced with considerable elegance of style, and variety of figure. Bombazines and Norwich crapes were also introduced from Norwich in 1819, camblets in 1822, and damasks soon after; French figures in 1834; and figured orleans in 1838. These, and many other fabrics new in this quarter, were, (as mentioned in the preceding pages) either first produced, or else the method of weaving them brought from Norwich by the enterprising family of Akroyd, to whom, not only Halifax, but also the whole of the worsted district of the North is under great obligations. Almost every description of worsted fabric, plain or figured, is produced at Halifax; but the fancy trade has, for a number of years, flourished exceedingly here, and now constitutes a prominent feature in its industry. The dobbies of forty years since, seem

to have been the forerunners of the French figures of 1834, brought out by Messrs. James Akroyd & Son, and the figured orleans which followed. Vast numbers of damask pieces for bed furniture are manufactured at Halifax, as well as figured goods for dresses; and the reputation which the town enjoys for the excellent quality of its fabrics, is well deserved. Viewed as a whole, the course of Halifax trade has been steady, and chequered by few seasons of depression.

The following synopsis, obtained from the books of Messrs. James Akroyd & Son, shewing when certain descriptions of goods began to be made by them, will afford much aid in obtaining a correct view of the progress of the worsted manufacture in Halifax during the present century.

- 1798. Calimancoes, plain and ribbed; lastings; prunelles.
- 1803. Serges de Berri; shalloons; russells; wildbores.
- 1811. Moreens; says; duroys.
- 1813.  $\frac{3}{4}$  bombazetts or plainbacks.
- 1819. Bombazines and Norwich crapes.
- 1822. Camblets; taborines; fancy russells; dobbies.
- 1824. Damasks.
- 1826-7. French merinoes, and full twills.
- 1834. French figures—a damask made  $\frac{6}{4}$  wide, of single worsted warp, and fine English or merino weft, wrought by jacquard engine, and producing a most beautiful and exact design.
- 1836. Alpaca figures.
- 1838 to 1840. Figured orleans, on a similar principle to the French figures, only substituting cotton warp; producing a light fabric, and a great and agreeable variety of figure.

There is no town in the worsted district where the drawback accounts for forty years (between 1810 and 1850) exhibit so great a ratio of increase in the consumption of wool as Halifax. This is partly owing to heavy goods being chiefly made here. The ensuing Table of wool washed in Halifax, for the worsted trade, has been prepared from the drawback accounts.

YEAR.	LBS.	YEAR.	LBS.
1810	491,520	1835	4,800,000
1815	531,840	1840	6,600,960
1820	1,405,540	1845	11,028,480
1825	2,042,880	1850	14,423,040
1830	3,657,600		



Out of the following Tables may be deduced the increase of worsted factories, &c., in Halifax parish; thus, in the year 1835, it contained 43 worsted mills, employing 2,551 persons as under:—

DISTRICT.	NO. OF MILLS.	CHILDREN UNDER 13.	CHILDREN ABOVE 13 AND UNDER 18.	ABOVE 18.	TOTAL.
Barkisland .....	1	6	24	23	53
Halifax .....	14	234	306	229	769
Hipperholme .....	6	81	126	60	267
Ovenden .....	4	38	35	22	95
Skircoat .....	2	54	67	60	181
Stansfield.....	2	70	45	134	249
Wadsworth .....	1	71	55	93	219
Warley .. .....	12	207	215	88	510
Norland .....	1	54	84	70	208
	43	815	957	779	2551

Of these 2,551 persons employed, 912 were males, and 1,639 females.\*

\* The following is taken from the Returns to the Factory Inspectors, in 1834, of worsted mills in Halifax parish; but it is evident Returns had not been made from some of the mills then existing there.

*Halifax.* Occupied by James Akroyd, (Old Lane) built in 1828, 60 horse power.  
 „ Occupied by R. Whitworth & Co., built in 1830, 18 horse power.  
 „ Occupied by John Holdsworth & Co., built in 1831, 40 horse power.  
 „ Occupied by Joseph Wood, applied to worsted in 1832, 12 horse power.  
 „ Occupied by James Akroyd & Son, (Bowling Dyke) no return.

*Hebden Bridge.* Occupied by John Crossley & Sons, (cotton and worsted) two mills, one built in 1819, and the other in 1822, 50 horse power.

*Southowram.* Occupied by Mr. Macaulay, (date of erection unknown) 30 horse power.

*Soyland.* Occupied by Henry Holdsworth, built in 1830, power not stated.

*Stansfield.* Occupied by Andrew Aspden, erected in 1824, 8 horse power.

*Wadsworth.* Occupied by Walker & Edmondson, (Mytholmroyd) built in 1792, 76 horse power, (steam and water.)

*Warley.* Occupied by John Alderson, applied to worsted in 1820, 4 horse power.

„ Occupied by William Appleyard, three mills, one built in 1821, another in 1826, and another in 1831, in all 21 horse power.

„ Occupied by R. Whitworth & Co., erected in 1819, 16 horse power.

„ Occupied by Samuel and William Smith, (Denholme Mill) built in 1827, 14 horse power.

„ Occupied by Thomas Murgatroyd, built in 1828, 5 horse power.

„ Occupied by J. and J. Calvert, built in 1831, 5 horse power.

„ Occupied by William and Samuel Smith, (Cooper House Mill) built in 1832, 8 horse power.

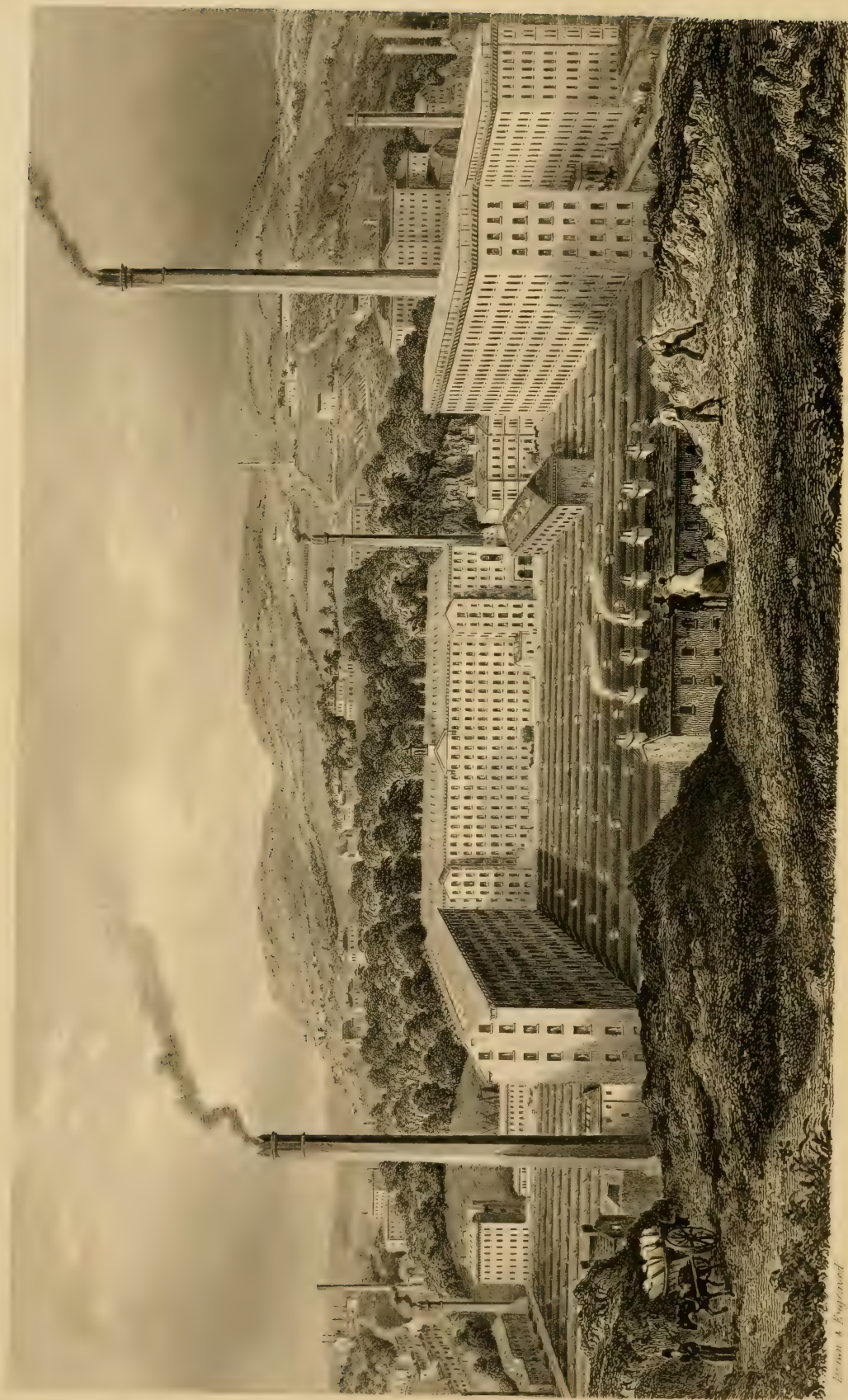
„ Occupied by Messrs. Morley, applied to worsted in 1833, 30 horse power.

Halifax had witnessed in the next three years a rapid growth in its worsted manufacture, for in the year 1838 the Parliamentary return gives 80 worsted mills (query firms) to the parish, with 50 steam engines of 1,150 horse power; 23 water-wheels of 259 horse power, and 5,614 hands, more than double the number in 1835. But in the following twelve years, up to 1850, the motive power had been increased one-third, and the number of hands trebled, thus:—

TOWNSHIPS.	NO. OF FIRMS.	NO. OF SPINDLES.	NO. OF POWER LOOMS.	HORSE POWER.		PERSONS EMPLOYED.
				STEAM.	WATER.	
Factories employed in Spinning:—						
Northowram ..	5	32,122	.. ..	190	19	1,365
Halifax .. ..	10	21,948	.. ..	155	..	853
Warley .. ..	6	12,554	.. ..	41	50	411
Sowerby .. ..	3	7,176	.. ..	34	10	348
Stainland .. ..	2	5,808	.. ..	40	..	272
Greetland .. ..	1	5,688	.. ..	40	..	134
Southowram ..	2	5,660	.. ..	40	..	224
Wadsworth .. ..	2	4,388	.. ..	41	..	166
Ovenden .. ..	5	4,316	.. ..	41	14	132
Skircoat .. ..	3	34,694	.. ..	179	15	1,557
Barkisland .. ..	1	1,600	.. ..	..	16	56
Elland .. ..	1	1,536	.. ..	11	..	67
Soyland .. ..	1	620	.. ..	..	5	39
	42	138,110	.. ..	812	129	5,624
Factories employed in Weaving:—						
Northowram ..	2	.. ..	811	78	..	2,568
Halifax .. ..	3	.. ..	81	14	..	112
Sowerby .. ..	1	.. ..	48	4	..	53
Southowram ..	1	.. ..	8	..	2	5
Ovenden .. ..	1	.. ..	28	3½	..	34
	8	.. ..	976	99½	2	2,772
Factories employed in Spinning and Weaving:—						
Northowram ..	1	14,864	550	160	..	1,312
Halifax .. ..	3	22,422	198	150	..	1,100
Warley .. ..	3	18,156	69	88	27	766
Sowerby .. ..	2	1,965	42	48	..	180
Southowram ..	1	1,620	28	16	..	88
Ovenden .. ..	6	3,300	640	235	30	1,841
Skircoat .. ..	1	14,096	405	100	..	854
Shelf .. ..	2	7,088	523	66	..	922
Brighouse ..	3	6,928	501	87	..	808
Midgley .. ..	2	6,352	103	41	..	310
Raistrick .. ..	1	1,020	5	6	..	24
	25	97,811	3,064	997	57	8,205

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DEAN CIOCH MILLS, HALIFAX

W. & A. G. & Co. Halifax

Owing to an absurd regulation, issuing from the office of the Secretary of State, the number of mills, &c., in Halifax, cannot be exhibited for the year 1856, as the returns are restricted to counties, and do not afford any information as to parishes or towns.

Among the factories of Halifax are two of the largest establishments of their kind in the kingdom, namely, Mr. Akroyd's for damasks, &c., and Messrs. Crossley's (at Dean Clough, see accompanying Engraving) for carpets. As the latter are classed among worsteds, and are made very extensively in Halifax, a sketch of the rise, progress, and present state of the carpet manufacture here, is subjoined:—

The first carpets manufactured in Halifax, were, it is believed, made by a Mr. Currie, and were of a description known by several names, but generally understood by that of four-quarter Kidderminster or Scotch carpets. They are made from worsted warp and woollen weft. It was about the year of our Lord 1780, when Mr. Currie first made this description of goods at Stannary, in Halifax. The spinning of both weft and warp was accomplished by hand, in various parts of the country, at cottages and farm houses. Mr. Currie found his trade increase so much as to require more extended premises, and he built a large factory at Luddenden Foot, (about four miles from Halifax) where he carried on the carpet manufacture until his death in 1816. He was succeeded by his sons, who failed in business within about two years of his death. William Abraham Turner, foreman to Mr. Currie, then succeeded to the works, and carried on the carpet trade for some years, but eventually he also failed. Mr. Emmett was the next in order to commence manufacturing carpets in Halifax, which he did at an old mill on the site of the present Bowling Dyke mills. After his death, the business was continued for some time by a Mr. Stead, but he ultimately failed.

Mr. Joseph Bateman commenced the manufacture of carpets here in the year 1805, and continued the same until his death in the year 1832, when he was succeeded in the business by his son, who, like many of his predecessors, became insolvent.

Several other small manufacturers commenced making carpets about the same period in the town and neighbourhood, but all of them eventually discontinued through losses or otherwise. Prior to the year 1800, the late Mr. John Crossley, (father to the present members of the firm of John Crossley & Sons,) wove carpets for Mr. Currie at Luddenden Foot, but owing to the breaking of a bottle at his loom side, his arm was so severely cut that it was with great difficulty the bleeding could be stopped. By this accident Mr. Crossley was disabled from following his occupation for a considerable time, and when he was walking about one day with his arm in a sling, Mr. Currie asked him whether, as he was not able to weave, he could manage to tie up a loom? He replied, that he would be most thankful to be allowed to try. He was allowed to try, and so expert did he become, that he was never afterwards allowed to return to the loom. Not long after this he became the principal manager for Mr. Job Lees, who made carpets in the Lower George



Yard, Halifax. This gentleman died very suddenly; Messrs. Abbott & Ellerton were his principal creditors, and in order to prevent loss, it was arranged that Mr. Abbott, Mr. Francis Ellerton, and Mr. John Crossley, (the late manager for Mr. Lees,) should carry on the works of the late Mr. Job Lees, in partnership together, under the firm of Abbott, Ellerton, & Crossley. This occurred about the year 1804, and in a very few years afterwards it was arranged that the partnership should be dissolved, and that Mr. Crossley should be the *Manager* of the manufacturing department, but spin and dye the yarns on his own account. Eventually, however, he purchased the entire manufacturing establishment, and continued to carry on the manufacture of various descriptions of carpets, assisted by his sons—gradually increasing and extending his works (which were principally situated at Dean Clough) until his death, which occurred in January, 1837. The manufacturing of carpets was then continued by his sons, John, Joseph, and Frank, under the firm of John Crossley & Sons. They soon added to their other business the manufacture of tapestry, velvet, and brussels carpets,—also mosaic rugs; and they have done much to develope inventions whereby the manufacture of carpets and rugs have been greatly facilitated and extended. This firm now employs over 3,000 workpeople.

During the last fifty years the population of Halifax has much increased, as the following table will shew:—

TOWNSHIP OF HALIFAX.	1801.	1811.	1821.	1831.	1841.	1851.
	8,886	9,151	12,628	15,382	19,881	25,180

KEIGHLEY. Manufactures from wool seem to have been, from the earliest period, peculiarly suited to the genius of that portion of Yorkshire having for its eastern boundary the parish of Leeds, and for its western one, the parishes of Halifax, Bradford, and Keighley. The latter town, in the reign of Queen Elizabeth, had grown to a place of some importance in the Riding,\* where the inhabitants of the yeomen class, pursued conjointly the arts of cloth making and farming, supporting themselves and families by the former, and enriching themselves by the latter. The weaving of shalloons and calimancoes formed a branch of manufacture here early in the last century, if not much sooner. Mention is made in the parish registers of a shalloon weaver in the year 1724,

\* In twenty years ending in 1581, there were, on a yearly average, 35 births, and 20 deaths; in twenty years ending 1601, a yearly average of 32 births, and 19 deaths. The population of the parish in 1695, reached 1,708 souls. In the twenty years ending 1724, the average yearly births were 62, and deaths 36. This and some other information has been furnished by Mr. Jonathan Hindle, Keighley.



and afterwards the designation often occurs in them. There is sure evidence of the existence of the manufacture here of shalloons and calimancoes in 1752, (see page 265) and it has been stated, that considerable quantities of Irish wool were then brought from the port of Lancaster to these parts.

During the seventeenth and eighteenth centuries, the inhabitants of the upper regions of Yorkshire obtained a scanty livelihood by spinning, first for the Norwich market, and afterwards for the Yorkshire stuff makers, adult females earning three shillings and sixpence a week, and children twopence or threepence a day. The inhabitants of Keighley and Haworth were among the most expert spinners. Gradually the weaving of stuffs grew to importance here, and absorbed the more ancient manufacture, that of woollen cloth. When Pennant visited Keighley, in 1771, he noted that this town "possessed a considerable manufacture of figured everlastings, in imitation of French silks, and of shalloons and calimancoes;" likewise that the inhabitants "were employed in spinning for the stocking weavers." To this day pieces are here woven something similar to these figured everlastings.

Shortly after this visit by Pennant, some of the enterprising men of Keighley planted in this town the cotton manufacture, which henceforward, for many years, almost destroyed that of worsted. An old and intelligent informant states that the first cotton mill was erected at Keighley about the year 1780. Others were soon after erected, and for many years cotton constituted the staple trade of the town. Early in this century, worsted factories began to be erected in the parish, the manufacture grew, and gradually cotton mills one by one were applied to worsted. In Aikin's *Picture of England*, published in 1804, there is the following:—"Keighley has a manufactory of figured everlastings, shalloons, &c., and broad cloth. This town is the northern boundary of the makers of goods for Halifax market. The same goods are made on the banks of the Calder. The frugality and industry of these people enable them to undersell their rivals in foreign markets."

From the amount of drawback claimed by the manufacturers of Keighley, for forty years, a very accurate notion will be obtained of the consumption of wool there in that interval; and from these accounts the subjoined statement has been framed.

YEAR.	LBS.	YEAR.	LBS.
1810	382,080	1835	3,313,920
1815	977,280	1840	4,224,000
1820	1,628,160	1845	5,345,280
1825	2,275,200	1850	5,932,809
1830	3,582,720		

This increase is larger per cent. than even Bradford, but less than in Halifax.

Keeping pace with the consumption of wool, the increase of factories has also been very rapid in Keighley.\* The parish in 1835, contained 22 worsted mills, with 9 steam engines of 107 horse power, and 15 water-wheels of 181 horse power (together 288,) and employing 1,061 hands, of which 53 were children between nine and eleven years of age, and 613 young persons between eleven and eighteen. There were then only 4 cotton mills of 95 horse power, with 196 hands. On turning to page 487 it is seen, that in the year 1838, the worsted mills numbered 38, with 424 horse power, and 2,125 workpeople; but, in 1850, though the mills were nearly similar in number, the motive power had been augmented to 632, and the number of persons employed to 4,357,

\* The following is extracted from the Returns sent in 1834 to the Factory Inspectors, but Returns do not seem to have been sent from *all* the mills in Keighley.

Mill occupied by Berry & Smith, built in 1810, 20 horse power in 1834; by N. Constantine, built in 1811, 18 horse power; by Calvert & Clapham, built in 1813, 20 horse power; by Richard Robinson, erected about 1817, 5 horse power; by Benjamin and William Marriner, applied to worsted in 1818, 30 horse power; by William Sugden, (Fleece Mill,) built in 1820, 42 horse power; by William Sugden, (Damems) applied to worsted in 1824, 14 horse power; by Lund & Sugden, built in 1824, 12 horse power; by David Illingworth, applied to worsted in 1828, 10 horse power; by William Lund, built in 1830, (power not stated;) by William Smith & Sons, built in 1830, 16 horse power; by Thomas Waterhouse, built in 1831, 5 horse power; by Hartley & Merrall (date not stated) 20 horse power.

shewing that the business, growing as it was, had become concentrated in fewer hands; 17 of these mills were used for spinning; 14 for spinning and weaving; and 8 for weaving only. The 17 mills for spinning were worked by 230 horse power (of which 149 consisted of steam and 81 of water) turning 28,642 spindles and employing 1,013 hands; the 14 mills for spinning and weaving possessed 322 horse power, (198 steam, and 124 water,) working 27,844 spindles, 1,484 looms, and employing 2,581 hands; and the 8 weaving factories had 61 steam power and 18 water (together 79) with 835 looms and 863 hands. Owing to the absurd restriction before noticed under the head of Halifax, the number of mills, the amount of horse power, and number of hands at present employed in Keighley, cannot be ascertained, else there is no doubt a great growth would be observed.

Keighley stands proudly distinguished among the towns of the worsted district; for in all seasons, even when trade in other stuff-producing localities has been at a very low ebb, the manufacturers here, as a body, may be said to have pursued the even tenor of their way. Hence the workpeople have been well employed, and with two or three trifling exceptions, mainly arising from the two-loom system, there have been no strikes or turnouts among them.

Most of goods manufactured in the parish are plain orleans and cobourgs. The fancy department is not much cultivated here; a few 'drawboys,' once so wide-famed, are still made in the parish; but the thoughts of the bulk of the manufacturers of Keighley are steadily fixed on producing a good marketable piece at the lowest price. A considerable quantity of worsted yarn is also spun here for export.\*

**BINGLEY.** When this town commenced the weaving of worsted stuffs cannot be ascertained. By the middle of the last century, the making of shalloons and calimancoes were among the avocations of its inhabitants (see page 265); but

\* The population of Keighley parish amounted in 1801 to 5,743 persons; in 1811 to 6,864; in 1821 to 9,223; in 1831 to 11,309; in 1841 to 13,378; and in 1851 to 18,258, an increase threefold in fifty years.



much earlier, they had, in common with these parts of Yorkshire, spun worsted yarn for the Norwich manufacture. About fifty years ago the first worsted factory was erected here, and gradually there have been built in the parish a goodly number. The cotton manufacture was also carried on in the town of Bingley, but it did not thrive; and a large mill, built for that purpose, was converted to a worsted factory. Until two or three years ago the stuff trade flourished exceedingly here, but since it has been in a languishing condition; many of the mills are empty, and hundreds of the hands have been compelled to seek other sources of employment. The goods manufactured at Bingley are of various descriptions, but lower qualities are, with an exception or two, chiefly made. The town lies conveniently for manufacturing purposes, being seated close to a line of railway and the Leeds and Liverpool canal, and will no doubt soon be restored to its former prosperity.

Bingley parish possessed, in the year 1835, 14 worsted mills with 12 engines of 156 horse power, 8 water-wheels of 66 horse power, and 788 workpeople; in the year 1838, 18 mills with 254 horse power, and 1,312 hands; and in the year 1850, 4 spinning factories of 99 horse power (44 of which consisted of water) with 8,264 spindles and 306 hands; 9 spinning and weaving factories of 258 horse power (55 of which was water power) with 18,566 spindles, 1,198 looms, and 1,972 hands; 4 spinning and weaving factories of 58 horse power, with 537 looms, and 661 hands.

LEEDS. Though Leeds has, from a remote period, been one of the great centres of the woollen manufacture, it has also, for a considerable time, possessed a manufacture of worsted stuffs. Thoresby, who wrote his History of Leeds about the year 1714, mentions, that there had been lately built in Leeds, a mill which contained a fulling stock for milling shalloons, serges, &c., evidently betokening the existence of the manufacture in the town, or immediate neighbourhood. The next trace which has been met with of the worsted manufacture in Leeds, is in the year 1752, when the

“manufacturers of worsted yarn, broad cloth, camblets, calimancoes, stuffs, and other woollen goods, presented a petition to Parliament, as mentioned at page 265. Arthur Young, in his Northern Tour, undertaken in the year 1768, and quoted in a previous page, (291) relates, that “some shalloons and many stuffs were made at Leeds, particularly Scotch camblets, grograms, burdies, and some calimancoes.” He also gives the rates of wages earned by the spinners and weavers. These Leeds camblets were in large request for the apparel of the lower classes of females, and many were also exported to the North of Europe. About the year 1783, their use for general wear began to decline, and the stuff makers at Leeds commenced making wildbores in considerable numbers. Afterwards, a few twills and plainbacks were made there, but being of too good a quality and high priced, were superseded by Bradford goods. (See Mr. Hall’s graphic reminiscences at page 311 *ante*.) Then the manufacture of the old or similar kind of camblets revived and continued a considerable trade for many years; but has now become nearly extinct. A stuff manufacturer of Leeds has drawn up the ensuing interesting narrative respecting them:—

Camblets are articles made from English wool, and have the designation either of tartan or plaid camblets, which is a combination of several colours, each colour thrown in by a separate shuttle; or plain camblets, that is, all of one colour.

There is also another description of goods made from worsted, similar to the tartan camblets, except they are twilled, while the tartan camblets are plain.

During the last fifty years, all the above have been extensively made in Leeds, principally in the neighbourhood of the Bank, but on account of the change in the mode of travelling, the substitution of other articles, and a variety of other causes, there is not a tithe of these goods manufactured compared with twenty years ago. At that period, there was probably a score of manufacturers engaged in the fabrication of these goods, employing many hundred weavers; at the present there are but two left, and these two have not employment for one hundred weavers.

About the period above alluded to, camblets, plaids, and tartan camblets, were supplied in great abundance to the home merchants, also to merchants connected with North and South America, and the continent of Europe.

Before railways were made, travellers by coach, had cloaks made of camblets, which were considered excellent for turning off the rain. The invention of Macintoshes partly superseded camblets. Then travelling by railway has called for railway wrappers, (an article made of woollen,) and a more free use of cotton for warps, has also tended to lessen the demand for goods all worsted; and thus from these several causes the trade has gradually been declining, and apparently the present tendency is an entire decadence.

The weavers of these goods, which are generally made by the hand-loom, and at their own houses, suffer much privation, arising from the decaying state of their trade. When in full employment they will earn from twelve shillings to twenty-four shillings per week, according to the quality of the work and their several abilities. Had they regular employment, they might, as a class, be comfortable. They are generally Irish, who work at weaving at the Bank, and by degrees are being drafted off to other employments, such as dyeing, labourers, mechanics, &c.; but it is amazing with what tenacity they cling to their old and decaying trade, although it is so palpable that there is no prospect of its revival again.

Soon after the establishment of the worsted industry in these parts, stuff merchants sprung up at Leeds, the chief town of the Riding, and though at first the best of the pieces were sent to the South to be dyed and finished, these processes eventually were accomplished on the spot, and ever since, many dyehouses have existed in Leeds. Until about the year 1829, most of the Bradford goods were purchased by the Leeds merchants, who, to suit their convenience and to add to the trade of the town, attempted, as stated previously (page 428) to establish a general stuff market at Leeds; but the star of Bradford proved to be in the ascendant, and the scheme did not succeed. Bradford, in retaliation, has now deprived Leeds of her stuff merchants.

In the year 1810, the amount of drawback on soap used in the stuff manufacture, amounted to £353, which is evidence that the stuff trade there was upon a considerable scale; in 1815, the drawback had dwindled to £200, but rising in the next five years to £254, and in 1825 to £370. In 1850, the drawback for Leeds district amounted, relatively to the preceding sums, to £1,190, but this aggregate might mislead as to worsted spinning or weaving operations in Leeds, unless coupled with the fact that it was nearly all claimed in respect of stuff dyeing or combing by machinery, both of which businesses are very extensive in Leeds.

Referring to the Parliamentary return of 1835,\* it will be seen that Leeds parish contained 10 worsted mills:—namely,

\* Returns were received by the Factory Inspectors, in 1834, from the following worsted mills in Leeds:—

- |               |   |
|---------------|---|
| <i>Leeds.</i> | Occupied by W. and E. Wilkinson, built in 1824, applied to worsted in 1827, 24 horse power. |
| ,,            | Occupied by Samuel Warburton, built in 1830, 14 horse power.                                |
| ,,            | by Hindes & Derham, applied to worsted in 1830, 58 horse power.                             |



7 at Leeds, with 787 hands; 1 at Headingley, with 418 hands; and 2 at Stanningley, with 190 hands; altogether employing 1,395 persons. The returns in 1838, for the parish of Leeds, give 13 mills moved by 414 horse power, and employing 2,149 workpeople. In the interim, up to, and inclusive of, the year 1850, these had decreased to 3 mills of 32 horse power for spinning with 3,016 spindles, and 99 hands; 2 mills for spinning and weaving with 75 horse power, 6,700 spindles, 214 looms, and 437 hands; and 3 mills for weaving with 39 horse power, 441 looms, and 440 hands.

WAKEFIELD. Has from an early date ranked as one of the first towns of the Riding. It is stated, that Henry VII. settled several foreign weavers of woollen cloth at Wakefield, where the manufacture had long been practised. The town had grown to be a large one in the reign of Henry VIII., when Leland relates, that it was "a very quick market town, and meately large, the whole profit of which standeth by coarse drapery." When the worsted branch took root in Yorkshire, it seems that the wages of the weavers were higher than those of the operatives engaged in the fabrication of woollen cloth, hence the latter turned to the new occupation, and among others those of Wakefield. The inhabitants had, in the year 1752, become of note for making stuffs, for we find them joining in the petition to Parliament, (several times before noticed in these pages) where they are described as makers of worsted yarn, camblets, and stuffs. Possessing many advantages from its canal navigation, formed in the year 1698, and communicating with the German Ocean, the town rose into importance as the great mart for wool grown in Lincolnshire and other quarters of the kingdom, used in the West-Riding. Previous to the year 1766 the stuff trade had here enlarged its dimensions so much, that a Piece Hall was erected by a company of proprietors about that time, being the first of its class built in the North. It was designated the "Tammy Hall," from the fact of that species of stuff being the chief fabric produced in Wakefield and the neighbourhood. This Hall is described as being a handsome building, two stories high, extending in length about

seventy yards, and ten in breadth. Through the middle in each story there ran a row of repositories, in all about two hundred. In consequence of the decline of Wakefield stuff trade, this Piece Hall was shut up about the year 1817, being afterwards converted into a factory. (See Mr. Hall's Narrative at page 313.) At the close of the last century, and commencement of this, its Tammy Hall presented on market days a stirring scene; whilst its woolstaplers supplied a large portion of the wool used in the worsted trade of the West-Riding, and numerous merchants also resided there, who had their stuffs dyed on the spot. Aikin, in his History of Manchester, published in 1795, writes thus of Wakefield:—"It is inhabited by several capital merchants, who have costly and elegant houses. It is large and populous, and possesses a considerable share of business. The markets in Wakefield are on a Thursday and Friday. A great deal of business is done at them, particularly in the sale of wool, which is sent from all parts of England to factors in this place, who dispose of it among manufacturers in the different districts around. The goods principally brought to this market are tammies and camlets, and also some white cloths."

In the year 1810 the manufacturers of Wakefield obtained a return of £111 as the drawback on soap consumed by them; in 1815 it had declined to £60, but rose in the next five years to £144; in the year 1825 to £604; and in the interval up to 1850 had increased, relatively to the preceding amounts, to £3,030.

There were, in the year 1835, in the parish of Wakefield, 10 worsted mills with 10 engines, and 1 water wheel of 194 aggregate horse power, and 1,028 hands; in the year 1838, 13 worsted mills, of 240 horse power, employing 916 hands;\* these had increased in 1850 to 17 mills, of 461 horse power, with 34,167 spindles, and 1,195 hands, solely for spinning, and a single mill of 16 horse power for spinning and weaving.†

Wakefield, situated at the eastern extremity of the worsted district of Yorkshire, has ceased to be a stuff producing district, its mills being employed in spinning hosiery yarn for the Nottingham and Leicester trade.

\* See page 487. † See page 512.

MANCHESTER. For upwards of a century, Manchester has, either more or less, been engaged in the production of worsteds. Last century, it was noted for making worsted small wares and furniture worsted drapery. In Aikin's History of Manchester, published in 1795, there are the following remarks on its trade:—"To the manufactory of laces, inkles, tapes, and filleting, was early added that of divers kinds of bindings and worsted small wares; but such has been the demand for English worsted of the best quality by the manufacturers of furniture checks, and Turkey stripes, that the small ware makers were constrained to use Irish worsted, which being cheaper, made them drop their prices, and the competition since has rather been in the cheapness than the goodness of the article. These furniture checks have grown into disrepute from the cockling of the worsted upon washing, and the upholsterers now use cotton stripes made on purpose, or prints with furniture patterns."

As mentioned in a preceding page (391) Manchester, about thirty years ago, produced a considerable number of poplins of a superior texture. It also claims the honour of having first brought out mixed stuffs of cotton warp and worsted weft in the shape of orleans cloth. (See page 472.)

Now large numbers of Mousselines-de-laine and other light worsted fabrics are made in the district of Manchester; and the city is noted for printing and finishing stuffs.

COLNE.—Colne possessed at an early period a manufacture of woollen cloth. The inhabitants seem from a remote date to have been a race of skilful weavers, so much so that the art may, figuratively, almost be said to be a native of the soil. Most likely the worsted manufacture was transplanted into the North Eastern portion of Lancashire, of which Colne may be deemed the capital, about the same time as it took root in the West-Riding, but of this no certain evidence has been discovered. However that may have been, the making of coarse worsteds prevailed here early in the last century; and in the year 1751, the shalloon and calimanco makers of Colne, along with those of Bradford, Keighley, and Bingley, pre-



sented a petition to Parliament, as mentioned at page 265. Before the year 1775, the worsted manufacture had grown to considerable dimensions here, for in that year a Piece Hall was erected in Colne, by a company of proprietors, to accommodate the cloth and stuff makers of that town and the surrounding country; and aged persons yet remember the busy throng who crowded this Hall on market days. From the Table in the Appendix, it is clear, that the stuff business formed a staple branch of occupation for the inhabitants at this time, inasmuch, as in the year 1781, the township of Colne, with a population of 2,757 souls, produced 13,534 pieces yearly, and the chapelry of Colne 42,843 pieces; whilst from the whole of the immediate neighbourhood the number amounted to 82,379 pieces yearly. Whether Colne serges, which constituted so important an item in Colne trade, mentioned in the preceding pages, are included in these numbers, is not known; but it may be presumed they were not, as they could not be classed among pure stuffs, but, as it is stated, were fabricated of worsted warp and woollen weft.

Soon after this date (1781) the worsted trade was, to a great extent, supplanted by the great development of that of cotton, in Colne as well as other parts of Lancashire; still a considerable number of stuff makers continued in this locality. The drawback on soap allowed to the Colne manufacturers in the year 1810, proves, that the trade had then revived; although its Piece Hall had been deserted; its former occupiers attending Halifax and afterwards Bradford Piece Hall with their goods.

About the year 1835, the use of cotton warps in the weaving of stuffs, brought in the manufacture of mousselines-de-laine, for which the Colne weavers were peculiarly fitted, owing to their having been employed on light cotton goods. Hence the district of Colne has become the chief seat for the manufacture of this description of goods; and likewise for that of low orleans and cobourgs. Here, in weaving the latter stuffs, is carried out to perfection the two-loom system, whereby the manufacturers have been able to undersell those of other localities.

**BURNLEY.** In Aikin's *Manchester*, published in 1795, there is the following notice of this place. "Its trade was formerly only in woollen or worsted goods, but the cotton manufactures are now introduced in it." The course of manufactures in Burnley district is so intimately associated with that of Colne, that any observations on the one, will in general apply to the other. The subjoined narrative furnished by Mr. Ecroyd, of Lomeshaye, near Colne, contains a brief history of the worsted trade in both the Colne and Burnley districts.

This district was inhabited in the Elizabethan period, and during the seventeenth and the first part of the eighteenth century, by a race of substantial and industrious yeomen and farmers. The large and ancient farm houses bearing dates from 1500 to 1720, with their large low apartments, spacious chimneys, and rows of mullion windows, were then the only dwellings, if we except here and there a cottage of the same style, adjoining a barn or farm house. But, even during this period, the inhabitants evinced a great taste and facility in the pursuit of manufactures, embracing the carding or combing, spinning, and especially weaving of worsted fabrics. And in the early part of last century, it is evident, that the daughters of substantial yeomen, and even of moderately wealthy proprietors, were proficient in the use of the spindle and distaff. It is probable that some, more enterprising than the rest, gradually commenced a trade which employed labour beyond the family pale, and in this way originated, what we must term the organization of manufactures in the neighbourhood. My own ancestors we find residing here in the early part of the seventeenth century, enjoying a comfortable landed property, upon which they seem chiefly to have depended. We find nothing beyond their participation in the domestic manufacture common to the district, until about 1751, when three brothers, were carrying on business as manufacturers, under a regular co-partnership, and appear to have employed twelve wool-combers, in the township of Little Marsden.

The manufacture, at the earliest period, consisted of striped and plain calimancoes, shalloons, tammies, and moreens, of which we have patterns in excellent preservation.

The striped calimancoes, shalloons, tammies, &c., appear to have been used for female dress. They were sold by our family in the country trade, and afterwards, perhaps increasingly, to the merchants frequenting the market and Cloth Hall at Colne. The goods *were dyed and finished* by the firm in *their own dyehouse here*. The hand spinning was done at the homes of the cottagers and farmers, and the firm had agents through the country round, as far as Clithero, Whalley, and Accrington, for the putting out of this work. Long correspondences and accounts between the firm and these agents, formed an important part of the business papers. The weaving seems to have been chiefly done in this township and neighbourhood, probably as a matter of safety and convenience.

But soon came events which interfered with the progress and development of this trade. The elder Sir Robert Peel and others were pushing their cotton spinning and weaving, and calico printing operations, through the valleys of North and East Lancashire; and whilst we find letters from the hand spinning agents, complaining that the new cotton trade offered more lucrative employment to the people, and drove out the worsted spinning, on the other hand we also find, that the new calico prints



were supplanting the old fashioned calimancoes throughout the kingdom. The parsley sprig, and the infinite variety of patterns which followed in rapid succession upon a new and cheap fabric, quite eclipsed the sober stripes of the heavy and costly worsted goods.

Under this twofold pressure the worsted trade in this district gradually declined. I give you with this a copy of a valuable document in our possession, shewing the value of the goods manufactured in this neighbourhood, in the year 1781. Had similar accounts been kept continuously, they would have thrown much light upon the progress and subsequent decline of the worsted trade here.

My ancestors appear to have met these difficulties by making other worsted goods for the Halifax trade, and their stand in the Piece Hall, at Halifax, was sold by my father not many years ago. They also had to obtain hand-spun yarns from Halifax, to supply the deficiency in the means of production in this neighbourhood.

From 1785 to 1835 the worsted trade here was thus placed at great disadvantage, and cotton gradually became the leading article of manufacture. The natural inclination and aptness for *weaving* in this district, all along continued to shew itself, by the great preponderance of weaving over spinning, and large quantities of cotton yarn came weekly from Manchester, to be converted into cloth, by the industry of our inhabitants; whilst bales of worsted warp and weft crossed the moors which separate Lancashire from Yorkshire, soon to return to Bradford in the shape of merinoes, wildbores, shalloons, plainbacks, &c.

Various other articles engaged the attention of our firm during this period. Amongst others, double russells, hosiery yarns, heald yarns, and a variety of fancy yarns for distant markets, in which the distance from Bradford or Halifax offered little disadvantage.

About 1835 mousselines-de-laine began to come into demand, being a fabric composed of worsted weft and cotton warp. It was believed that these goods could only be woven in hand looms, and from the great numbers and skill of the weavers in this neighbourhood, it became the centre of an extensive and rapidly increasing manufacture, which has again come to dispute with the cotton trade the predominance in Colne Chapelry. Fully maintaining their ancient high position, I am proud to say, that the inhabitants of this district have taken a rank, second to none, in the construction of the power-loom, and its application to both worsted and cotton goods; and the Burnley district is well known to have become, by the energy, skill, and enterprize of its inhabitants, one of the most advanced and important seats of the power-loom weaving trade.

Probably from 20,000 to 30,000 power-looms are employed in the manufacture of cotton goods, whilst about 2,500 looms are constantly employed upon worsted goods, embracing orleans and cobourg cloths, and mousselines-de-laine, for the Manchester, Bradford, and Glasgow markets. Add to this, that, 2,000 to 2,500 of the looms employed on cotton, turn to worsted goods whenever they happen to be the more profitable manufacture, and that a steady increase in the looms *permanently employed* upon Bradford goods continues to take place here; and you will perceive that a not unimportant production of worsted goods goes on still in this ancient seat of that manufacture.

With the change from hand-loom to power-loom weaving, the circumstances and habits of the people have greatly improved. In this district, in consequence of the opportunity to fall back upon cotton goods, looms are never stopped, and but rarely put on short time during periods of depression; and as the great bulk of the population, both male and female, young and old, are *weavers*, it follows, that a family generally work *altogether* in the factory or shed, the father, sons, and



daughters frequently occupying twelve, twenty, or more looms, *all adjoining*, and thus united at work as at home, all contribute their exertions, from the father and elder brothers with their three looms each, down to the little boy or girl who fills the shuttles and sweeps the floor.

Worsted spinning is carried on by four or five concerns\* in Burnley and the neighbourhood, ourselves among the number. It is, however, altogether only to a limited extent.

NORWICH. For several hundred years Norwich constituted the centre, and indeed almost the sole seat of the worsted manufacture. Hence, the general history contained in the previous pages, up to the commencement of the present century, consists, in great part, solely in a narrative of the progress and fluctuations of the Norwich trade, and therefore the present section can only be considered a brief *résumé*. Thus it has been shewn, how from a town in Norfolk the manufacture itself, at a very early period, obtained its name; denoting that locality as the first spot in England where the manufacture was carried on:—how undoubted proof is afforded that worsteds were made in Norwich in the reign of Edward II., and had “been accustomed to be made before” then, but how long cannot be distinctly ascertained:—how, from the appointment of an Alnager in Norwich, to measure, &c., those stuffs, it is evident that the making of them had become a staple business:—how the manufacture increased in the reign of Edward III. by the settlement in Norwich of many Flemish stuff weavers, and that an export of worsteds then sprung up:—how the city became, in the middle ages, the most populous in the kingdom after London, and immensely enriched by the manufacture:—how the Norwich stuff manufacture became the subject of several Acts of Parliament for its protection in the reigns of Henry VI., and Edward IV.:—how Henry VII. fostered the Norwich manufacture:—how it was extended, and several new articles introduced, and the weavers incorporated in the reign of Mary:—and how, especially in that of Elizabeth, numerous foreign worsted weavers settled here, and brought with them many new manufactures of stuffs.

There are two great eras in the history of Norwich; the first in the reign of Edward III., the other in that of Queen Elizabeth. During her sway the trade of Norwich greatly prospered.

After the reign of Elizabeth there was, for nearly a century, a stagnation in the Norwich trade. It began again to flourish in the benign reign of William III., and henceforward its course ran in a prosperous channel. We observe the importance of Norwich manufactures when De Foe visited the city ; but the great era of Norwich greatness may be dated in the middle of the last century (from 1743 to 1763), its trade being in a most healthy condition, and of great extent. When Arthur Young visited it in 1771, he narrates that the city was one of the most considerable in England after London ; that its staple manufactures were crapes and camblets, besides which its artizans made in great abundance damasks, satins, alopeens, &c. He estimated the yearly value of the Norwich stuff manufacture at £1,200,000 a year, and the number of workpeople at 72,000. As a view of Norwich trade, the whole of Arthur Young's observations are worthy of attentive perusal (see page 270) ; not less so is the picturesque narrative of Mr. Taylor (written twenty-seven years after that of Young) in which we find that the stuffs of Norwich were in less demand for home consumption than formerly, and were mostly exported, and that the war prevented their sale abroad, consequently he estimated the yearly value of the manufacture in Norwich at only £800,000. What worsted articles were made about this date in Norwich may be gathered out of the following items extracted from the books of one of the largest establishments in the city:—camblets made to the yearly value of £65,000, of which a seventh part was exported to Italy, a fifth to Spain and her Colonies, a twelfth to Germany, a ninth to Russia, an eighth to Norway and Sweden, and nearly one-third to China ; camletees to the value of £4,423, nearly all exported to Germany and Holland ; calimancoes to the value of £17,693, of which £15,500 worth was sent to Russia, and the remainder to Holland, &c. ; satins £11,036, above one-half which were sent to Germany, the remainder to Russia, Spain, &c. ; even all the bombazines made by this house were exported to Spain and Madeira ; sundry figured stuffs, valued at £4,860, were half of them exported to Spain, and the rest to Germany, &c. ; lastings, valued at £4,739, exported to Spain, Norway, Sweden, &c. There were, at this period, other thirty manufacturing houses, and it was



estimated that the whole value of the exports from Norwich amounted to nearly £1,000,000 sterling. At page 364 (*ante*) will be found a description of the calimancoes which were in such great request in Russia, and of the camletees and figured stuffs.

From the commencement of the present century the ascendancy of Norwich as the chief seat of the worsted manufacture began to decline. The development of the factory system in Yorkshire, in addition to the lowness of wages there, tended to transfer to the North the manufacture of the coarser kinds of goods, except camblets. Besides the Norwich manufacturers had many of them engaged in the silk trade. Still there continued to be a large amount of business done in worsteds at Norwich. In the year 1818 it was estimated that there were 10,000 looms employed in the city in weaving stuffs, half of which wove camblets, calimancoes, and other stuffs, and the other half bombazines. But shortly after this date bombazines began to be manufactured in Yorkshire, and these, as well as the Kidderminster bombazines being cheaper, injured, to some extent, that branch of Norwich trade. The manufacturers of the North also carried from Norwich, a portion of its other staple manufactures, namely, moreens in the year 1811, damasks in the year 1824, and lastly, they participated in the manufacture of its old and favoured fabric, the camblet for export to the East.

Whilst however, Norwich, from time to time, lost some of its most important staple fabrics, its manufacturers evinced great ingenuity and fertility of invention in endeavouring to supply their place. Thus was started the fabrication of Norwich shawls, which for a long period have been in great favour. These were at first made of cotton cloth embroidered with worsted along the edges and at the corners. After a time a superior article in shawls was produced woven of silk warp and fine worsted weft, and designated "Norwich shawls," a term implying excellence of quality. Many of these were sold plain, others were embroidered with worsted, and some with silk, in various patterns and colours. Afterwards what was called the "Fillover shawls," of Norwich fabric were in fashion. Although Paisley has supplanted Norwich



as the chief manufactory of shawls, yet the latter still maintains its repute for the manufacture of this class of goods.

To supply also the void caused by the removal of a large portion of its worsted manufactures to other localities, Norwich crape began to be woven in 1819 as before mentioned at page 386; then challis was introduced, a very elegant worsted article (see page 436.) Norwich was also among the earliest to establish the use of the Jacquard machine in the weaving of stuffs. Hence for a time its decline was delayed by the impulse given to its trade by the demand for its figured stuffs; but these afterwards were produced much cheaper in Yorkshire.

On turning to page 483, it will be found that in 1838 the city contained the large number of 4,054 weavers, of which those employed on bombazines were one-fourth. These weavers were mostly employed at their own homes.

Although for some time past, Norwich has been engaged in many other branches of trade, such as the making of lace gauze, crape, and shoes, besides carrying on a considerable silk manufacture, yet it still continues an important seat for that of worsteds. Poplins, made after the Irish fashion, are produced here, but the city is chiefly noted for its paramattas woven of silk warp and worsted weft, a beautiful but costly texture, resembling the now obsolete bombazine. Camblets are still manufactured at Norwich in considerable numbers for China. Many light worsted fabrics, such as challis, &c., are here made in greater perfection than at any other place. Mohair to some extent is spun at Norwich for the Continent; but the factory system has never taken extensive root in this locality. Much of the worsted yarn used in the weaving of its goods is spun at Bradford, and the number of power-looms are not many. The population of Norwich at the last Census amounted to 68,196, of which 15,000 were engaged in its staple trade.\*

\* The following pages in this volume contain notices of Norwich manufacture,—36, 45, 54, 55, 57, 67, 86, 87, 90, 100, 107, 111, 120, 140, 141, 143, 153, 166, 196, 214, 216, 219, 243, 251, 252, 263, 269, 270, 307, 309, 310, 364, 436, and 437.

The letters of "Senex," quoted in the preceding pages, were, in addition to other information, courteously furnished by Wm. Byles, Esq., Proprietor and Editor of the Bradford Observer.

**KIDDERMINSTER.** This town was early in last century engaged in making stuffs for hangings and printing (see page 255.) Afterwards the manufacture of bombazines being introduced here, Kidderminster next to Norwich became the most noted for the production of this fabric. But in late times this town is known chiefly for its carpet manufacture, which was started here in 1736, and in the year 1772 there were in the town 250 carpet looms. In the early part of the present century it enjoyed almost a monopoly of the carpet trade, and weavers obtained high remuneration; for instance in 1804 the wages for weaving point Brussels carpets were one shilling per yard; in 1805 one shilling and a penny per yard; and in 1810 they rose to one shilling and a halfpenny per yard. Soon after the close of the war, the attention of manufacturers in other districts was directed to the carpet manufacture, and competition arising, the rates of the Kidderminster weaver fell to one shilling per yard: this lowering of wages occasioned a turn-out, for it must be observed that the Kidderminster weaver had always been an unruly subject. There were turn-outs also in 1818 and 1819, but the weavers were in all these unsuccessful. Meanwhile the manufacture of Kidderminster and Ingrain carpets increased much in Scotland and Yorkshire, where wages being much lower, the article could consequently be sold cheaper; and the making of Brussels carpets which had been confined to Kidderminster, began to take root in those places. This unequal competition compelled the Kidderminster masters to reduce, in the year 1828, wages. The workmen resisted the reduction, and a strike or turn-out occurred of twenty-one weeks duration, from which Kidderminster suffered severely; for although the masters conquered, yet very many of the most skilled weavers removed to other localities, especially to Scotland.

Prior to the year 1838, the condition of both the bombazine and carpet weaver had much deteriorated. The bombazine trade had gradually decayed and nearly all the weavers had sought and obtained other work. In the year 1838, a Commissioner was sent by Government to Kidderminster to inquire into the condition of these weavers, and from his Report it appears there were at that time 24 carpet

manufacturers in Kidderminster, employing 1765 Brussels looms, 210 Scotch, and 45 Venetian, total 2,021, with 4,016 workpeople; and about 70 bombazine weavers working in their own dwellings, and earning about seven shillings a week; but the work being light, was chiefly performed by women and aged persons. It is estimated that there are now upwards of 2,000 carpet looms in Kidderminster. Formerly large quantities of yarn were forwarded from Yorkshire to this town, for the warps in carpets, &c., but the factory system has of late been extended here, and several factories have been established in the town and neighbourhood for spinning. The population of Kidderminster at the last Census amounted to 32,917.

**SUDBURY.** A Colony of Flemish worsted weavers settled here in the reign of Edward III., as mentioned at page 55. Henceforward the place became one of the seats of the manufacture and its stuffs were in considerable note in the middle ages. It will be seen on referring to page 231, that Sudbury in the early part of last century was “famous for making shalloons;” afterwards when Arthur Young visited the place about 1772, he noted that besides being the dirtiest town in the kingdom it possessed a good trade in says, burying crape, and also in bunting for ship flags. Afterwards the worsted trade declined in the place, and that of silk about fifty years ago was introduced by some Spitalfield manufacturers. The trade now consists of silk and crape, likewise the ancient manufacture of bunting for ship flags is still kept up to some extent. It is computed that the crape and bunting business in Sudbury employs about 500 hands.

**LEICESTER.** Seated in the midst of one of the largest wool producing districts in the kingdom, Leicester has for ages been engaged in working it up in some form or other; first in the manufacture of woollen cloth, then of worsteds, and now in the making of hosiery, both worsted and cotton. In the year 1850, it was conjectured that there were about 15,000 frames in the town and county, employing 30,000 persons.



## APPENDIX.

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### ADDITIONS AND CORRECTIONS.

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Page 1. In "The Origin of the Laws, Arts, and Sciences, and their Progress among the most Ancient Nations," by the President De Goguet, there are many curious observations on ancient spinning and weaving, from which the ensuing are extracted.—(Vol. 1, p. 121, *et seq.*)—"Next to agriculture the arts of making clothing are without dispute the most necessary and useful. There are few inventions which have displayed so much sagacity and done so much honour to the human understanding." \* \* \* "Men in all ages have busied themselves in searching for proper materials for covering their bodies, without restraining the activity of their motions. The working up of these materials has been the object of infinite, incessant, study and reflection. To these earnest enquiries we are indebted for that prodigious number of different kinds of stuffs which are in use among civilized nations. The first men wore the skins of wild beasts, and it is a proof of their state of barbarity. As mankind became more civilized they improved upon these primitive practices. They endeavoured to find out methods for taking off the hair or wool, and forming these into a covering as warm, but more pliable than their skins or furs. This art is very ancient. In the patriarchal ages we see the people of Mesopotamia (Gen. c. xxxi, v. 19) and Palestine (Gen. c. xxxviii, v. 12-13) took great care of shearing their sheep. The invention of spinning is of very great antiquity. The Egyptians say it was Isis who taught them the art of spinning. The Chinese give the honour of this invention to the Consort of the Emperor Yao. We may observe, on this subject, that the traditions of almost all nations ascribe the honour of inventing the arts of spinning, weaving, and sewing, to women. The Lydians ascribe this discovery to Arachne, the Greeks to Minerva, the Peruvians to the wife of Manco-Capac their first Sovereign." He then proceeds to observe, that network probably preceded weaving, "till by degrees they found out the web by warp and woof, *the most useful* invention, perhaps, which mankind are in possession of." After alluding to conjectures about the origin of weaving, namely, from the spider's web, or from the interlacing of the bark fibres of some trees, and to the simple machines which would primitively be used for weaving, he proceeds: "the invention of weaving is extremely ancient. Abraham alludes to the thread of the woof. Moses says that Abimelech made a present of a vail to Sarah; also that Rebecca covered herself with a vail when she perceived Isaac. Jacob gave his son Joseph a coat of divers colours. Pharaoh arrayed his patriarch in vestures of fine cotton. A weaver's shuttle is mentioned in the Book

of Job." He afterwards proceeds to state, that in these very ancient times weaving was performed in a standing posture; that the warp was placed perpendicularly, not fastened at the bottom, but kept firm by means of a piece of wood to which they hung heavy weights; and he thus observes, "the Egyptians, it is said, changed the standing to the sitting posture, as our weavers use at present."

*Page 3.* Perhaps as convincing a proof as can be given that the worsted manufacture dates prior to that of the woollen, properly so called, may be gathered from De Goguet, a great authority on these subjects. He states (vol. 2, p. 297) that the Greeks did not know how to full cloth until long after the Siege of Troy, therefore it is presumed that their wool fabrics were of the nature of worsted. See hereafter also for other notices of the manufacture among the Greeks.

*Note 3.* Neither Cuvier, Buckland, nor De la Beche, mentions remains of the sheep having been found in ancient caves in Europe, which would seem to imply that in the earliest ages it did not exist in that quarter of the world. The best opinion is, that it is a native of Central Asia.—See Mr. Yates' able work "Textrinum Antiquorum."

*Page 4.* Pliny excuses himself on several occasions from particularly describing the processes of several of the domestic arts as being beneath the notice of a philosopher. The writer of the article on Dyeing in Rees' Cyclopædia remarks, "amongst the Greeks the useful arts were degraded even in the eyes of philosophers, and this contempt descended to the Romans."

Pliny allows that the Egyptians invented the art of weaving, (Book vii, 56;) and Athenæus even mentions the man's name, Pathymias, the Egyptian.—Deipn. lib. ii. It is related by Strabo, (xvii, p. 559,) that Chemnis a city in Egypt retained the credit it had acquired in making woollen stuffs nearly to the period of the Roman Conquest. These stuffs were chiefly used by the lower orders, (and therefore would be extensively made,) but sometimes by the rich and even by the priests.—Wilkinson, vol. 3, p. 114. Many of the Egyptian stuffs presented various patterns worked in colours by the loom, but mostly the colours were dyed in the stuffs. The coloured dresses of the Egyptian ladies of rank, as represented on their paintings, much resemble our modern chiatzes, and some of them are very beautiful in the disposition of the colours.

*Page 8.* President De Goguet (vol. 2, p. 297,) observes on the art of weaving in Ancient Greece:—"The first inhabitants of Greece were clothed in the skins of beasts killed in the chase, as the writings of Hesiod testify. Cecrops brought the art of weaving from Egypt to Greece. Athens was renowned for its stuffs of wool. The wool of Attica, was in the judgment of the ancients, the best then known. They were very careful to improve their wool. It is not to be doubted that in the time of Homer the women stood to weave. Homer gives us to understand that at the time of the War of Troy they used oil in the preparation of their stuffs." "Perhaps (adds Goguet) the Greeks used oil and the heat of the fire to draw the *worsted* and spin their wool more finely and more easily." This, coupled with the fact that until after the Siege of Troy the Greeks did not know how to full cloth, shows the very ancient date of the worsted manufacture in Greece.

*Page 10.* Mr. Yates, the learned author of "Textrinum Antiquorum," in a letter to the author, states, that the Babylonish garment mentioned in the Scriptures, was no doubt a Cashmere shawl.

Page 10—Note 3. For “Periplus Maxis” read “Periplus Maris.”

Page 13. By an error of the Engraver the first figure in Plate I is the horizontal loom, and the second the upright loom of the Egyptians, so that at the eleventh line for “first” read “second,” and at the twelfth line for “second” read “first.”

Page 15. For ‘ariundo’ read ‘arundo.’

Page 17. Though the writers of the middle ages mostly comprise both woollens and worsteds under the term ‘woollen’ or articles made of wool, and do not often specially allude to worsteds, yet it is undoubted that the latter in those periods formed a large portion of the female dress on the Continent.

Page 29—Note. For ‘Masden’ read ‘Masdeu.’

Page 31. From Capmany’s History of Barcelona nothing is clearer than in the middle ages the worsted manufacture was carried on to a great extent, and with much skill at Barcelona. It is quite evident that the inhabitants of that city manufactured large quantities of the finest stuffs from English wool, which even then appears to have been best adapted to the purpose, and brought a high price.

Page 33. Cæsar informs us that the Britons had abundance of cattle (*pecoris magnus numerus*) and under the word ‘pecus’ must be included sheep.—Yates’ Antiq. Text: where it is also mentioned that the Ancient Britons inhabiting Kent, wove stuffs.

Page 34. Dionysius Alexandrinus “De Situ.”—Eumenius the Rhetorician, in his panegyric on Constantine the Great, in allusion to his being born in Britain, exclaiming, “O! fortunate Britain, &c,” speaks of the land as loaded with fleeces. The country, then as now, would be well adapted for the rearing of sheep bearing fine wool, and most assuredly it would be applied to the making of Roman stuffs.

Page 36. It is quite evident that says, a kind of worsted, were used for bed furniture in the Norman period of English History, because it is so mentioned in several writers of that period; among others Alexander Neckam, in his Vocabulary, written early in the twelfth century, states, bed coverlets were commonly of green say.

Page 38. Guicciardini (see page 123) terms them “Ostates.”

Page 39. Stow mentions in his History of London “wolsted or say, partly coloured,” shewing that at that period say was sometimes termed ‘wolsted.’

Page 41. See page 77.

Page 44. It seems fairly deducible from the tenor of the words “worsted called oldhames” that other worsteds were made at Norwich, but that the complaint arose only in respect of the “oldhames.”

Page 45. Strutt quotes the following authority to shew that say was considered at that period a fine fabric. “*Quodam delicato panno qui vulgo saie vocatur.*” Hugo de S. Victore de Claustro Animæ, lib. ii.

Page 46. Strutt prefixes to his account of the cloths and stuffs worn in England in the thirteenth century these observations:—“There certainly was a great increase in clothing materials during the thirteenth century, not only from the new productions of our own manufactories at home, but also from the importation of a variety of foreign articles.” He mentions that at this period camlet was fabricated of goats’ hair.

Page 57. “Litt” was a dyed stuff. A dyer in the Middle Ages was termed a “litster.” In the account given at page 58 it is shewn that a cloth was valued at two pounds, and a piece of worsted at sixteen shillings and eightpence, which



plainly denotes that the low duty of one penny a piece on worsted was intended as a special encouragement to that manufacture.

*Page 58.* On examining the accounts of this "State or Balance of English Trade," it will be found there are some slight discrepancies, but it was thought better to follow implicitly the authority quoted.

*Page 60.* Since the note at the foot was printed I have endeavoured to trace any vestige of this account in the Exchequer Records, but without success; still I have no doubt of its authority.

*Page 62.* In the Plowman's Tale, (Book iii., 631) imputed to Chaucer, there is the following couplet:—

"Some weren a miter and ring  
With double worsted well idight."

This passage plainly proves that double worsted was, though stout, a fashionable and prizable article of dress.

A kind of Commercial Parliament was convened by Edward III. in the thirtieth year of his reign, to which Simon de Worstede was summoned.

*Page 64.* On reviewing the subject of this page, I the more incline to the opinion that Raleigh and Robert of Avesbury must have been mistaken, and that the subsidy granted by Parliament in 1354, was on wool sold in the kingdom both for home and foreign consumption. The real export of wool probably stood at about the same amount as indicated at p. 58, namely, 31,651 sacks. On further investigation, I find that although the *most usual* subsidy of wool was of "wool exported," yet that such was not invariably the case.

*Page 68.* Double worsteds were probably so called from being made of double warp and weft. It is probable that as the ray was a checked stuff, that motley was a mottled one.

*Page 69.* *Serges* appear to have been much used for bed furniture about the time of Edward III.

*Page 74.* The "beds" of worsted were evidently the same as "say." Some of these "beds" were fabricated for curtains and other furniture, such as hangings for the walls of rooms. Half double worsteds were most likely pieces made of double warp and single weft.

Upon further consideration I think the beds of worsted were not the finest, for although that of the greatest assize sold at two shillings and fourpence a yard, yet if we take into account its great width, it does not appear to have been as fine, judging from the price, as the camlet and tartan mentioned at page 72.

*Page 80.* In the "Privy Purse Expenses of Elizabeth of York: Wardrobe Accounts of Edward IV." edited by Sir Nicholas Harris Nicolas, we find many allusions to worsted articles; for example, at page 116 "chameletts of divers colours at thirty shillings the piece; black chamelet three shillings a yard." Again at page 117, for a piece of "grene tartaryn" eighteen shillings; for red worsted of the most assize twenty-three shillings and fourpence the piece; for red worsted of the middle assize fifteen shillings and sixpence the piece; for worsted green and red of the middle assize fifteen shillings and sixpence the piece; and for red worsted of the least assize ten shillings and sixpence the piece. Mention is also made at page 129 of sparvers (bed furniture) of blue and red worsted. It is also stated at page 141, that out of three pieces of red worsted of the most assize were made three costers and three counterpoints for three beds; and of six pieces of red worsted of the middle assize nine curtains to three beds were made.

*Page 81.* In the Wardrobe Accounts of Edward IV. before alluded to, it is mentioned (page 20) that a sum was paid to a tailor for making two coats of black chamblet for young Lords Henry and Edward Courtney: at page 44 black chamblet at two shillings and fourpence the yard, and tawney chamblet at two shillings the yard, are enumerated.

*Page 87.* Stammin or double worsted was no doubt used for making men's light clothing.

*Page 92.* From many sources we are informed that in the reign of Henry VIII. bed hangings were formed of say, and that say was also used for clothing. Queen Katherine Howard gave as presents to the venerable Countess of Salisbury "a kirtle of worsted and a gown of the fashion of a night-gown of saye lined with satin of Cypress."—Acts of Privy Council, vol. vii., p. 130.

*Page 99.* In the Surtees Society's Publications, vol. 26, there is an inventory of goods of Galfred Calvert, of Burton in Bishopdale, 1575, in which a spinning wheel and stool are valued at eightpence.

*Page 109.* The difficulty here noticed as to says and stamens being "outlandish commodities," may perhaps be obviated, if we consider that the "sayes" mentioned in the Queen's Letters were most likely "Flanders' sayes," afterwards specified at page 118, and the "stamens" probably fine tammies.

*Page 151.* I am aware that the word "stranger" in those days did not mean foreigners alone, but for sundry reasons the order alluded to seems to allude to the Dutch Settlers.

*Page 153.* The words "that all sorts of stuffs, whether woven of wool only, or of wool and other materials," afford evidence that mixed stuffs of silk and worsted, &c., were made there.

*Page 155.* *Hounscot* is a corruption of *Houdscot* in Flanders.

Query, as the Russells here mentioned were foreign productions, is the word a corruption of "Brussels?"

The statement in this page "that our worsteds exported were of a coarse quality" requires modification; some of our stuffs exported were so, such as those valued at one shilling and threepence and one shilling and fourpence the pound weight, but the narrow worsted rated at fifteen shillings the piece and broad worsted at twenty shillings, must have been, according to the then value of money, of fair quality.

*Page 159.* It has been suggested that "cheanyes" like the modern stuff "chiné" were waved fabrics.

*Page 160.* Haynes in his "View of the Present State of the Clothing Trade in England" thus describes the Blackwell Hall Market. "Blackwell Hall consists of commodious apartments for lodging of cloths and stuffs brought from the several counties of England, and then sold either by the maker or by his factor, and is the most noted cloth mart in the world. To this place on Thursdays, Fridays, and part of Saturday, the merchants, &c., resort. But Thursday morning is the chief market time, for then the waggoners and carriers from the several counties bring in their goods. The hours of the market are from eight in the morning to eleven, and from two in the afternoon to four. The opening of the market is notified by the ringing of a bell, and so is the conclusion. A penny is paid as duty upon each cloth called pitching penny, and a half-penny per week for warehouse room, and so in proportion for serges, stuffs. These duties are paid to the Governors of Christ Hospital. The factors from time to time advised the clothiers what sortments were



proper to be made, &c., and were paid a factorage for their services. Formerly merchants in general and others resorted to Blackwell Hall to bring their wares, but now different, for the goods "are sold up and down in corners" to the great injury of the manufacture."

It is not quite clear whether Norwich or Canterbury stuffs were at all included in this 'order,' mentioned at p. 160.

*Page 161.* An author of this period thus alludes to some of these seats of the manufacture:—"At Norwich, Canterbury, and Colchester, as also in Spitalfields and some suburbs of London, the making of all sorts of stuffs, silks, sattins, and velvets, had arrived at great perfection. At Exeter they vend by relation, many thousand pounds worth of serges every week. How profitable have the Dutch Colony been to Colchester by being entertained there, which was offered first to Maldon, who have lost much wealth by the refusal of so brave a proffer." *The True English Interest, an Account of the Chief National Improvements.—London, 1674.*

*Page 166.* Many of these Refugees settled at Canterbury, the stuffs of which place made by them resembled in fineness and make the Norwich stuffs.

*Page 174.* In line twenty-four for "at" read "towards."

*Page 190.* It is evident that shalloons were about the year 1700 made in Yorkshire, and that they were then submitted to some fulling operation; for Thoresby in his *Ducatus*, page 78, mentions a mill in which was a fulling stock for milling shalloons, serges, &c., and a twisting mill with eighty bobbins. According to Thoresby, the business transacted then was for cash, not bills.

*Page 198.* The statement that the worsted manufacture held the "*first* and proudest position in our manufacturing system, had grown to be the chief staple of the kingdom, and a main source of its wealth, prosperity, and power," may perhaps be too strongly expressed, but that it held *one* of the first and proudest positions, had grown to be one of the chief staples, and one of the main sources of our wealth, cannot be denied. It must be remembered that "all its varieties" is meant to include the serges of Exeter, the bays of Colchester, &c. Besides the spinning of worsted employed then such an enormous number of persons, far beyond that of any other staple manufacture.

*Page 211.* The reader will be surprised at the large number of spinners required to spin the yarn for a piece of stuff. One comber could supply thirty-five spinners with wool, and it required ten spinners to supply yarn for each weaver. It is evident from this statement that in 1715 children were chiefly employed in spinning. Probably also spinning was now to a great extent performed on the rock or distaff, a slow process, but one producing fine durable yarn. See also page 218, where the spinners are set down very numerous in proportion to the weavers. At page 285, it will be seen, that in the year 1771, it required only one comber for fourteen spinners, and four spinners could furnish yarn for one weaver.

*Page 217.* The cantaloons here mentioned were evidently the same as the stuff made in the time of James I., under the name of "*cátalowne*."—See page 144.

*Page 218.* "The chief trade of this city (Norwich) is with London, and that in these two commodities especially, viz: *stuffs and stockings*: the stuffs here vend in a time of *free trade* may be estimated at £100,000 per annum and upward, which said stuffs are under the government of two Companies, one called the *Worsted Company* and the other the *Russel Company*. Those manufactures under the government of the *Worsted Company* (and approved by the Wardens



thereof) have a seal affixed to each end thereof, the one seal having this word (*Norwich*) on one side, and certain letters on the other, which stand for such of the Wardens' names as are present at the sealing thereof: the other seal hath on one side these words, (*Worsted Reformed*,) and on the other side thereof (in figures) the quantity of yards the piece contains; and those manufactures under the government of the *Russel Company*, and approved by them, have but one seal, which hath on one side the representation of a castle, and on the other side these words, (*Fidelitas Artes alit.*) This stuff trade is chiefly managed in partnership between the London and Norwich merchants, great quantities whereof have in former times, in a free trade with other nations, been exported beyond the seas to several places, but especially to Spain, and from thence to the West-Indies." The Merchants' Map of Commerce, by Lewis Roberts. The Fourth Edition, carefully corrected and enlarged.—*London*, 1700.

Page 226. For "linen" in line twenty-seven read "mohair."

Page 228. In the statement "likewise tammies were also of single warp and twilled," for "and twilled" read "woven plain."

Page 229. On reference to page 284 it will be seen that "harrateens" were in the latter part of the century among West-Riding manufactures. An ancient manufacturer informs me they were a coarse stuff, woven plain; something between a tammy and moreen.

Page 230. Were Alapeens the same as the stuffs now manufactured under the name of Alepines? which are a five-quarter plainback sixty yards long.

Page 269. "Chiveretts" mentioned in line seven are included among the stuffs made in the time of James I.—See page 143.

Page 286. An account of the value of all woollen goods, serges, says, stuffs, stuffs mixed, &c., exported from England to all countries in the year 1772:—

	£		£
Africa .. .. .	167,571	Quebec .. .. .	64,045
Canaries .. .. .	18,395	Nova Scotia .. .. .	15,428
Denmark, &c. .. .	29,416	New England .. .. .	285,553
East Country .. .. .	40,855	New York .. .. .	128,179
East-Indies .. .. .	232,643	Pensylvania .. .. .	216,055
Flanders .. .. .	203,975	Maryland and Virginia	185,437
France .. .. .	2,990	Carolina .. .. .	84,226
Germany .. .. .	253,847	Georgia .. .. .	26,492
Holland.. .. .	411,140	Florida .. .. .	17,357
Ireland .. .. .	169,044	Antigua .. .. .	11,219
Italy .. .. .	454,992	Barbadoes .. .. .	11,963
Madeira .. .. .	3,726	Bermuda .. .. .	1,999
Portugal .. .. .	500,298	Dominica .. .. .	3,067
Russia .. .. .	53,011	Grenada .. .. .	10,130
Spain .. .. .	552,575	Jamaica.. .. .	63,841
Straits .. .. .	110,811	Montserrat .. .. .	1,512
Sweden .. .. .	809	Nevis .. .. .	1,050
Turkey .. .. .	59,191	St. Christopher's .. .	7,488
Venice .. .. .	13,375	St. Vincent .. .. .	1,271
Guernsey, &c. .. .	6,801	Tobago .. .. .	1,990
Hudson Bay.. .. .	1,643	Tortona.. .. .	1,701
Newfoundland .. .. .	9,751	Mosquito Shore .. .	196

*Page 295.* These two Statutes have had and still have an important bearing upon the interests of the worsted manufacture, and to give the readers a view of their enactments the following epitome is presented. The first of these two legislative measures (17 Geo. III., ch. 11) constitutes the Committee for carrying them into effect, and for that purpose to raise a fund. It relates that by the previous Acts of Geo. II. and Geo. III., penalties and punishments were inflicted upon all persons reeling false or short yarn, and on persons embezzling the materials used in manufactures, but that the good purposes of those laws had been greatly frustrated from the manufacturers of combing wool, worsted yarn, and goods made from worsted, being unwilling to expose themselves singly to the loss attending the resentment of the spinners and workpeople by prosecuting them for those offences, so that this important branch of the woollen manufacture would be greatly prejudiced unless the manufacturers were enabled jointly to carry the law into effectual execution, which could not be done without the aid of Parliament. It was, therefore, enacted that a General Meeting of the manufacturers of combing wool, worsted yarn, and goods made from worsted in the counties of York, Lancaster, and Chester, should be held at Halifax, on the second Monday in the month of June next ensuing after the passing of the Act, at which General Meeting the manufacturers present by themselves or proxies appointed by writing under the hand of any such manufacturers, should have votes, and having first chosen a Chairman, the Yorkshire manufacturers should elect eighteen persons from amongst themselves, and the Lancashire and Cheshire manufacturers should in like manner elect nine others, such twenty-seven persons to be a Committee of the said manufacturers, and to nominate and recommend two or more proper persons to be licensed by the Justices of the Peace of the West-Riding of Yorkshire, at any of their Quarter Sessions or any adjournment thereof, to be Inspectors for the purposes of the Act, such Committee to have the direction of all prosecution of the offenders against that and the said before mentioned Act, and to have the management of the fund to be created, and to do all other matters and things which might be deemed necessary and proper for carrying the Act into execution, in such manner as the said Committee of the manufacturers for the time being, or any seven or more of them, at a Public Meeting to be assembled, might judge and think best for the interest and advantage of all the said manufacturers.

Provisions then follow for the appointment of a Clerk to the Committee, prescribing his duties and appointing Quarterly Meetings of the Committee, at which questions should be determined by a majority; not fewer than seven Committee men to constitute a meeting for the transaction of business. That in case any one or more of the said Committee should die, or decline business as a manufacturer, or go to reside in any distant part of the kingdom, or wilfully absent himself or themselves from the said Quarterly Meetings for the space of a year, then the Committee at one of their Quarterly Meetings should choose another or other proper person or persons being manufacturers of combing wool, worsted yarn, or goods made from worsted, in his or their place or places. It was also declared that every person or persons employed or undertaking to spin or reel worsted yarn for hire in the counties of York, Lancaster, and Chester, or any of them, should reel or cause or procure the same to be reeled, either upon a yard reel of thirty-six inches; or a two yard wheel of seventy-two inches round; and when such worsted yarn should be so reeled, each and every several hank of such worsted yarn to



consist of or contain seven raps or leas, and that each and every such rap or lea, should consist of or contain eighty threads of such worsted yarn.

Then follows a clause that if any person or persons hired or employed in the combing of wool, or in the spinning, reeling, winding or weaving of worsted yarn, or in the preparing or working up of any of the materials used in the said manufactures, in the said counties of York, Lancaster, and Chester, or any of them, should reel or cause to be reeled any worsted yarn contrary to the directions herein-before specified and laid down for reeling such yarn, or conceal, keep back, embezzle, sell, or otherwise dispose of any wool or other materials entrusted with him, her, or them to spin or other purposes, and if all or any of such several offenders be lawfully convicted upon the oath of the owner of such yarn or wool, or the Inspector or Inspectors appointed as aforesaid, or of any one or more credible witness or witnesses, such person or persons should be subject and liable to the penalties and punishments inflicted by the Acts of Parliament before mentioned (22 Geo. II., ch. 27—14 Geo. III., ch. 44—15 Geo. III., ch. 14—so far as that of the 22 Geo. II. remained unrepealed by the 14 Geo. III.) but with power of appeal to the Quarter Sessions. A penalty was also inflicted upon Agents refusing to discover persons guilty of false reeling.

To provide money for carrying into effect the provisions and purposes of the Act, a fund is directed to be raised in this manner. By several Acts of Parliament made in the tenth and twelfth years of the reign of Queen Anne, and also by subsequent Acts, the Collectors of the duty levied upon soap were ordered to pay out of the money in their hands, by way of drawback unto any person or persons who should employ any quantity of soap in making any manufactures whereof the greatest part in value consisted in wool, or in preparing the wool for the same, the duties upon the soap spent and consumed thereon. The Collectors of duties on soap within the counties of York, Lancaster, and Chester, were now required to deduct and retain twopence out of every shilling of drawback to which any person being a master manufacturer of combing wool, worsted yarn or goods made from worsted, residing within the said counties, might be entitled; and to pay the same twopence in the shilling to the Treasurer of the West-Riding, to be paid and disbursed as the Committee or any four of them should in writing under their hands direct. And in case the fund after payment of all charges and expenses amounted to six hundred pounds, then power is given to the Justices of the West-Riding, at Quarter Sessions, upon application of the Committee, or fifty or more of the said master manufacturers, to reduce the twopence in the shilling to three half-pence, one penny or one half-penny per shilling, as they might think necessary, until the fund should be reduced to three hundred pounds.

The other Act of Parliament (17 Geo. III., ch. 16,) solicited the same year as the first, contained more stringent clauses for the prevention of frauds in the manufacture of wool than in any preceding statute, and extraordinary powers were given for their repression, and also for the regulation of the workmen. After reciting the Act 22 Geo. II., ch. 27, it declared that no person should be convicted thereunder, unless before two Justices of the Peace, (one previously was only required,) and that the penalties imposed by the said recited Act, upon all persons buying or receiving embezzled materials, should be increased to not more than forty pounds, nor less than twenty pounds, for the first offence, with imprisonment with hard labour for not more than six, nor less than three months, in case



of non-payment; the second offence to be remitted to the Quarter Sessions, and upon conviction to forfeit not more than one hundred and fifty pounds, nor less than fifty pounds, and upon non-payment, to be imprisoned for not more than six months, nor less than three months with hard labour. The like punishment was imposed upon persons guilty of selling, pawning, &c., embezzled materials knowing them to be such.

The next clause is a very important one, and has caused much animadversion. It is in substance as follows:—After stating that it frequently happened that materials used in the manufacture, were found or known to be concealed in the possession of persons who had received the same, knowing them to be purloined or embezzled, or of persons known not to be entitled to the same, and that the conviction of embezzlers, stealers, and receivers, was full of difficulty from the clandestine manner in which the offence was committed; that there was great difficulty in proving whose property such materials were, and that it would tend to the discouragement and suppression of such offences if the discovery and conviction of the offenders were rendered easier; and that power should be given to search the houses and premises of persons before conviction, not after, according to the provision of the statute 22 Geo. II,—the Justices were therefore empowered upon oath of a credible person that there was cause to suspect that any purloined or embezzled materials were concealed in any place, by warrant to direct the same to be searched in the day time, and such suspected materials and the person in whose premises the same should be found, to be brought before two Justices, and if the said person should not give an account to the satisfaction of the Justices how the same was come by, he or she should be convicted and forfeit for the first offence twenty pounds, and for every subsequent offence forty pounds, to be levied by distress, and in case of no sufficient distress, to be for the first offence committed to prison for one month, for the second offence two months, and for every subsequent offence six months. From this conviction, power of appeal is given to the Quarter Sessions.

There is also a clause empowering Constables, to apprehend between sun setting and rising, every person or persons who may reasonably be suspected of having or carrying or conveying any embezzled materials, and if the person carrying or conveying the same should not produce the party duly entitled to the same, or give an account thereof to the satisfaction of the Justices, the said person or persons should be punished as above directed respecting persons in whose premises embezzled materials should be found.

*Page 296.* An attempt was made, without success, in 1823, by Mr. Moore, Member for Coventry, to repeal the Worsted Acts.

*Page 315.* Bradford, in 1780, contained 4,200 inhabitants.

*Page 320.* Mr. Luccock also gives in his work the following particulars respecting the wool of England, in the year 1800:—

					lbs. oz.
The average fleece of	England nearly	..	..	..	4 8
Ditto	short wool	..	..	..	3 4
Ditto	long wool	..	..	..	7 10
Produce per acre of	long fleece wool	..	..	..	8 0
Ditto	short ditto	..	..	..	1 5
Ditto	long skin wool	..	..	..	0 5
Ditto	short ditto	..	..	..	0 4

*Pages 326, 346, & 347,* for “Crampton” read “Crompton.”

*Page 331.* In the words “woollens exported” was meant to be included all textures of wool, whether purely woollen or worsted, or mixtures of both.

*Page 351.* For ‘Vauconson’ read ‘Vaucanson.’

*Page 354.* In the tenth line from the top for “official value” read “declared value.”

*Page 356.* The importance of the false reed was such in facilitating the weaving of stuffs, that an old weaver thus illustrated the value of it:—He said, if I had been offered the best cow in England instead of my false reed, I would not, poor as I was, have accepted the offer.

*Page 358.* Hand spinning for the worsted manufacture began to be discontinued about the year 1810.

*Page 359.* Among the extravagant estimates of the value of our manufactures from wool may be mentioned that of Mr. McArthur, who in 1803 values the whole, including our fabrics from foreign wool, at £25,560,000. Mr. Colquhoun in his work “British Empire,” published in 1814, thus calculates the amount in 1812: “Woollens including manufactures from Spanish wool, in the value of which is included the labour of the men, women, and children employed in every branch of the woollen manufacture, [including worsteds] after deducting for the raw material, eighteen millions sterling.”

*Page 363.* The true camblet is plain, but a bastard kind was at this time also manufactured with a twill. See also page 427.

*Page 364.* Kettering, in Northamptonshire was, according to Eden (*State of the Poor*, vol. 2, p. 530) a noted seat of manufacture for tammies, lastings, calimancoes, and fine serges; and there were also many Jersey spinners at Northampton.

*Page 366.—Note.* Owing to a slip of the pen the counts of yarn are mentioned to be according to the pound of *wool*, instead of *yarn*. In the low counts it requires sixteen hanks to make a pound of yarn, and so on according to the ‘counts;’ thus, in yarns numbering forty-eight, it requires that number of hanks to make a pound weight of yarn.

*Page 371.* In the villages of the West-Riding and Craven there was no manufacture of importance from combing wool carried on, only so far as a portion of that wool was used for knitting stockings.

*Page 372.* In the sixteenth line from the top read ‘Akroyd’ instead of ‘Ackroyd.’

*Page 377.* The stuffs exported are included in the Returns under one head ‘woollen and worsted stuffs.’

*Page 379.* In the eleventh line from top for £187,820 read ‘187,820 pieces.’

*Page 387.* An illustration of the rapid strides the West-Riding had made in population during this century, may be gathered from Marshall’s tables:

YEAR.	MARRIAGES.	BAPTISMS.	BURIALS.
1800	3,909	15,334	11,731
1810	5,710	19,716	13,211
1820	6,516	22,463	12,882

*Page 440.* Mons. Guillotte, maker of Jacquard machines, gave evidence before the Select Committee of the House of Commons, on Arts and Manufactures in 1836,

which contains some particulars worthy of extract.—He says “For Yorkshire I am at present particularly engaged in making Jacquard machines, for merinos and damasks.” The demand for the Jacquard machines commenced in England eleven years ago, and has become much more active of late in Yorkshire.

*Page 441.—Note.* It might from the tenor of this note be inferred, that it was a Ten Hours’ Bill that was passed at this time, but it was not, as shewn in next page 442.

*Page 442.* Evidence was given before the Factory Commissioners, of two-hundred and thirty-six cases of deformity among mill hands at Bradford, from excessive standing.

*Page 444.* This was Darnforth’s spindle.

*Page 447.* It is omitted to be mentioned that Arthur Young’s estimate was of sheep in *England*, as likewise those of Luccock, and Hubbard; but the estimates of Youatt and McCulloch, are of the sheep in the *United Kingdom*.

Mr. Youatt’s estimate was thus made up:—108 millions of pounds weight of British wool at 1s. 3d. a pound, 46,535,232 pounds of imported wool at 2s. 6d. a pound, £12,556,904; wages of 350,000 persons at £25 each, £8,750,000; dye wares, oils, and other raw materials, £1,450,000; wear and tear of fixed capital, profits, &c., £4,250,000; total, £27,006,904. McCulloch’s estimate was thus framed:—116 millions of pounds of British wool at 1s. 3d. a pound, £7,250,000; 48,439,216 pounds of foreign wool at 1s. 9d. a pound, £4,238,431; wages of 350,000 persons at £20 each, £7,000,000 sterling; dye wares, oils, &c., £1,450,000; wear and tear, profits, &c., £4,250,000; total, £24,188,431.

*Page 448.* In 1835, another attempt was made to disallow the drawback on soap used in the worsted manufacture; but upon a representation being made to the Chancellor of the Exchequer, the attempt was abandoned.

*Page 467.* A notice was intended to be inserted here of the Cashmere goat wool, and the productions therefrom, but it was accidentally omitted. This wool has for ages been in the East manufactured into fabrics for shawls, &c. The true Cashmere goat is (like the Alpaca) reared on the highest table land, being an inhabitant of the mountainous parts of Thibet, twelve or sixteen thousand feet above the level of the sea. For many years the French have been at great pains to naturalize this goat and turn to use its wool, but without any really practical result. Some persons also in England have kept flocks; that in particular of His Royal Highness Prince Albert has attracted attention in the worsted districts, from a portion of the wool being, in the year 1850, by desire of the Prince, manufactured into articles of dress by Messrs. Gregory, of Shelf. The wool being in its native state mixed with kemp or coarse hair, there is great difficulty in separating the wool, but after immense labour a quantity of wool was sorted out, and some rich brocaded dresses were manufactured from it, the warp being formed of silk and the weft of the Cashmere wool. The experiment, however, in a practical view, proved a failure, and pretty clearly demonstrated that the wool of the Cashmere goat cannot, on account of its containing so much coarse hair, become an ordinary material of manufacture in this country.

*Page 471.* In the Order Book of the Worsted Committee, for 1821, it is mentioned that several sums were due on drawback upon soap used in “washing mixed worsted and cotton yarn;” and at page 398, *ante*, mixed goods are mentioned as being made in 1824 of worsted and cotton.





AVERAGE WEIGHT OF FLEECES IN ENGLAND IN 1800, 1828,  
AND 1840.

	LUCCOCK, (1800.)	HUBBARD, (1828.)	1840.
	lbs.	lbs.	lbs.
Northumberland .. .. .	5½	5½	..
Ditto, Leicester .. .. .	..	..	5½
Ditto, Half-bred Cheviot and Leicester ..	..	..	4½
Ditto, Cheviot .. .. .	..	..	3
Durham .. .. .	5	5¼	6½
Ditto, .. .. .	9	8¼	7
Cumberland .. .. .	3¾	5	4
Westmoreland .. .. .	3½	5	4
Yorkshire, West-Riding .. .. .	Various	5½	5½
Ditto, East-Riding .. .. .	5	6	6½
Ditto, Holderness .. .. .	8	8	8
Ditto, other parts .. .. .	8	8	7½
Lancashire .. .. .	3½	4½	4½
Cheshire .. .. .	Various	4½	4
Derbyshire .. .. .	3	6	6
Nottinghamshire .. .. .	Various	6½	6½
Lincolnshire .. .. .	5½	6	6
Ditto, rich Land .. .. .	9	9	8½
Ditto, Marshes .. .. .	8	8	..
Ditto, Miscellaneous .. .. .	8	6	7
Rutland .. .. .	5	6	6½
Northampton .. .. .	6	6	6
Warwick .. .. .	3	6	5
Ditto .. .. .	5	6	6
Leicester .. .. .	3½	6	6
Ditto .. .. .	7	6	6
Oxford .. .. .	Various	5	5½
Bucks. .. .. .	3	5	5
Berks. .. .. .	3½	3½	3½
Gloucester .. .. .	Various	6	5½
Ditto .. .. .	8	6	7
Somerset .. .. .	4½	5	4
Worcester .. .. .	3½	4¾	5
Monmouth .. .. .	Various	4	3
Hereford .. .. .	2	4	4½
Salop .. .. .	2½	4	4½
Stafford .. .. .	2	4½	5
Ditto .. .. .	7	4½	..
Bedford .. .. .	5	5	5
Huntingdon .. .. .	4¼	5½	5½
Ditto .. .. .	7	5½	5½
Cambridge .. .. .	4	4½	4½
Ditto .. .. .	8	8	7½
Suffolk .. .. .	2½	4¼	Short 4
Ditto .. .. .	..	..	Long 5
Norfolk .. .. .	2	4½	Short 4¼
Ditto .. .. .	7	7¼	½-bred 4½
Essex .. .. .	3	4	Marsh 7½
Ditto, long .. .. .	..	..	4
Ditto, short .. .. .	..	..	5

AVERAGE WEIGHT OF FLEECES IN ENGLAND IN 1800, 1828,  
AND 1840, *continued* :—

	LUCCOCK, (1800.)	HUBBARD, (1828.)	1840.
	lb s	lbs.	lbs.
Herts. . . . .	4 $\frac{1}{2}$	5	5
Middlesex . . . . .	4	5	5
Kent . . . . .	3 $\frac{1}{4}$	4 $\frac{3}{4}$	4 $\frac{1}{2}$
Ditto, Romney Marsh . . . . .	7	6 $\frac{1}{2}$	5
Ditto, the Marshes . . . . .	7	6 $\frac{1}{2}$	5
Surrey . . . . .	3	3 $\frac{1}{2}$	4
Sussex Downs . . . . .	2	3	3
Ditto, Lowlands . . . . .	3	3	4
Hants. . . . .	3	3	3
Isle of Wight . . . . .	3 $\frac{3}{4}$	4	4
Wilts., Downs . . . . .	2 $\frac{3}{4}$	2 $\frac{3}{4}$	3 $\frac{1}{4}$
Ditto, Pasture . . . . .	3	4	4
Dorset . . . . .	3	3 $\frac{3}{4}$	4
Devon. . . . .	4	5	5
Ditto . . . . .	8	8	7
Cornwall . . . . .	4	7	6

QUANTITY AND DECLARED VALUE OF WOOLLEN AND  
WORSTED YARN EXPORTED IN THE YEAR 1851.

	lbs.	£
Russia . . . . .	1,779,792	217,512
Sweden . . . . .	7,504	849
Norway . . . . .	5,264	488
Denmark . . . . .	9,408	1,074
Hanover . . . . .	83,888	7,021
Hanseatic Towns . . . . .	9,007,264	863,756
Holland . . . . .	2,175,264	202,990
Belgium . . . . .	453,488	48,620
Channel Islands . . . . .	39,312	3,821
France . . . . .	371,840	74,351
Portugal Proper . . . . .	7,280	376
Madeira . . . . .	112	8
Spain . . . . .	20,384	2,884
Canary Isles . . . . .	112	32
Gibraltar . . . . .	2,016	181
Sardinia . . . . .	165,200	15,699
Tuscany . . . . .	5,712	524
Roman Territories . . . . .	560	50
Naples and Sicily . . . . .	5,152	623
Austrian Territories in Italy . . . . .	5,936	501
Malta . . . . .	224	45
Greece . . . . .	112	3
Turkish Dominions, exclusive of Wal- lachia, Moldavia, Syria, and Egypt. . . . .	2,912	250
Egypt . . . . .	3,584	150
Western Coast of Africa . . . . .	336	62
South Africa . . . . .	448	62
British India . . . . .	5,936	1,050
Philippine Islands . . . . .	336	40



QUANTITY AND DECLARED VALUE OF THE WOOLLEN AND WORSTED YARNS EXPORTED IN THE YEAR 1851, *continued*—

	lbs.	£
China .. .. .	20,048	765
Australia .. .. .	1,344	274
British North America .. .. .	35,616	3,243
"    West-India Islands .. .. .	336	50
Cuba .. .. .	336	56
Curacoa .. .. .	448	62
United States .. .. .	447,776	36,335
Mexico.. .. .	224	111
Central America .. .. .	1,904	243
New Granada .. .. .	224	35
Brazil .. .. .	112	13
Buenos Ayres .. .. .	1,456	141
Chili .. .. .	336	45
Peru .. .. .	1,344	150
	lbs. 14,670,880	£1,484,544

THE FOLLOWING TABLE OF THE PRICES OF STUFF PIECES IN JULY, 1854, IS TAKEN FROM FRASER, SON, & CO'S. CIRCULAR.

STUFF GOODS.		PRICES.			
		s.	d.	s.	d.
6/4 Orleans .. .. .	⌘' piece	10	0	30	0
7/4 Ditto .. .. .	"	18	0	40	0
9/4 Demi Lustres .. .. .	"	16	0	35	0
7/4 Ditto .. .. .	"	23	0	50	0
6/4 Alpaca Lustres.. .. .	"	28	0	80	0
7/4 Ditto .. .. .	"	35	0	60	0
6/4 French Twills .. .. .	"	38	0	80	0
5/8 Wildbores and Bombazets .. .. .	"	9	0	18	0
"    Buntings .. .. .	"	9	0	20	0
3/4 Lastings .. .. .	"	29	0	82	0
"    Union ditto .. .. .	"	23	0	75	0
"    Serge De Berries .. .. .	"	35	0	92	0
"    Union ditto .. .. .	"	35	0	80	0
6/4 Camblets .. .. .	⌘' yard	0	6	1	6
6/4 Ditto .. .. .	"	1	0	2	0
4/4 Merinoes .. .. .	⌘' piece	13	6	16	6
6/4 Ditto .. .. .	"	17	0	73	0
3/4 Damasks .. .. .	"	21	0	54	0
"    Union ditto .. .. .	"	11	0	24	0
"    Fancy Lastings and Crape, Worsted..	"	21	0	44	0
"    Ditto ditto Mixt .. .. .	"	12	0	48	0
"    Coat Linings .. .. .	"	9	0	23	0
6/4 Worsted & Cotton & Worsted Fancies	"	10	0	50	0
"    Ditto ditto ditto with Silk .. .. .	"	15	0	80	0
"    Imitation Mixt Lustres .. .. .	"	9	0	16	0
"    Mixt Lustres .. .. .	"	18	0	50	0
"    Imitation Madonnas .. .. .	"	12	0	16	0
"    Ditto .. .. .	"	20	0	40	0
3/4 Princettas .. .. .	"	16	0	60	0
"    Grogams and Coatings .. .. .	"	16	0	35	0
"    Moreens .. .. .	"	16	0	30	0
6/4 Shalloons .. .. .	"	16	0	80	0
"    Says .. .. .	"	30	0	120	0

## GREAT EXHIBITION.

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CLASS XII., contained WORSTED STUFFS under the following classification :—

- |    |                                    |     |   |
|----|------------------------------------|-----|---|
| 1. | FABRICS composed entirely of WOOL. |     |   |
| 2. | Do.                                | do. | WOOL and COTTON.                                  |
| 3. | Do.                                | do. | WOOL and SILK.                                    |
| 4. | Do.                                | do. | WOOL, SILK, and COTTON.                           |
| 5. | Do.                                | do. | { ALPACA and MOHAIR mixed<br>with COTTON or SILK. |

In CLASS XV., were comprised SHAWL CLOTHS, POPLINS, PARAMATTAS, BAREGES, &c.

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*The Jury awarded Prize Medals to the following Exhibitors in Worsted Stuffs :—*

AKROYD, JAMES, & SON, Manufacturers, Halifax. (130, Classes xii. and xv., p. 491.\*) The productions of this firm are eminently diversified and beautiful. The damasks are distinguished by elegance of design, richness of colour, and superiority in weaving. The union damasks, composed of worsted and cotton, are noticeable also for economy of production. The satin Turc goods have a regularity, which shows that all possible care has been bestowed on their production. Some fabrics entitled 'Moirés d'Exposition' are remarkable for their novelty and the brilliancy of their effect. The articles made with silk warp and China grass are very beautiful. The patterns, colours, and combination of materials, are alike deserving of praise. The ponchos are well made and adapted for the markets of South America.

BIETRY & SON, Manufacturers, 102, Rue Richelieu, Paris. (356, France, p. 1194.) For Cashmere fabrics of great fineness and regularity.

BOTTOMLEY, MOSES, & SON, Shelf, Bradford. (165, Classes xii. and xv., p. 493-4.) The goods shewn by this firm are woven with great regularity, and the designs of the figured fabrics are good.

BOUCHEZ-POTHIER. (34, France, p. 1173.) For merinos of excellent manufacture.

BROWN, W. Manufacturer, Halifax. (129, Classes xii. and xv., p. 490.) For damasks composed of combinations of wool, silk, and cotton. Great taste is displayed in the designs; and in brilliancy of effect, and perfection of manufacture, the goods approach very nearly to those exhibited by Messrs. Akroyd.

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\* Referring to the number and page in the Official Catalogue.

BRUHM & NAGLER, Manufacturers, Gera. (816, Prussia, p. 1095.) For cloths made with worsted weft and silk warp, well woven and dyed.

CAILLET-FRANQUEVILLE, Marfeu. (82, France, p. 1175.) For merinos of excellent manufacture.

DAUPHINOT-PERARD, Manufacturer, Isle-sur-Suipfres (Marne.) (471, France, p. 1200.) For merinos of excellent manufacture.

DAVID, BROTHERS, & Co., Paris, (157, France.) For merinos and cloths mixed with organzine and spun silk. The average of these fabrics is very good, the weaving satisfactory, and the colours and elegance of design very praiseworthy.

DAVID, LABBE, & Co., Sains, Richaumont. (138, France, p. 1178.) For the lowness of the prices at which their fabrics are produced.

DELATTRE & SON, Manufacturers, Roubaix, (Nord.) (142, France, p. 1178.) This firm is eminently distinguished by the excellence of its productions, and the specimens now shown fully justify the numerous distinctions which the French government has, at several preceding Exhibitions, accorded to it. The Jury has noticed particularly a fabric, all wool, denominated 'Chambard,' of which the work is admirably perfect; the cloth named 'Toile Victoria,' equally beautiful, and the 'Satin de Chiné' made of the finest materials, and with unequalled accuracy of workmanship. These goods occupy a very eminent position among the French productions, and in the judgment of the Jury fully entitle the manufacturers to a Prize Medal.

DELFOSE, BROTHERS, Manufacturers, Roubaix, (Nord.) (144, France, p. 1178.) For great merit in the articles they display. The 'Chambard' is very admirably manufactured, and some of the 'Satins de Chiné' are remarkably fine in their texture.

FOSTER, JOHN, & SON, Manufacturers, Black Dyke Mills, near Bradford. (143, Classes xii. and xv., p. 492.) The goods exhibited by this house are interesting, not only on account of their intrinsic excellence, but as displaying the great variety of fabrics produced in the worsted stuff trade. They comprise articles for ladies' dresses, coatings, vestings, linings and serges, umbrella and parasol cloths, and damasks for hangings. The display of alpaca and mohair manufactures is remarkably varied, and the weaving is even and regular. The combination of materials is very good; several designs of the fabrics brocaded by the Jacquard looms are elegant, and the effects well brought out. The coatings shown, (of which large quantities are exported to the Continent and the United States of America,) are distinguished by their stoutness, fineness, and general excellence.

GOUTCHKOFF, E. & J., Manufacturers, Moscow. (189, Russia, p. 1373.) For cloths, 'Satins de Chiné,' all wool brocaded; fabrics of worsted and organzine silk warp, and cashmere-de-laines. These goods are distinguished by unsurpassed neatness of manufacture, excellence of design, and economy of production.

GRUNER, F. W., Glauchau. (101, Saxony, p. 1109.) For merinos, all wool, of great regularity in weaving, and of excellent colours.

HAAAS, P. & SONS, Manufacturers, Vienna. (259, Austria, p. 197.) Damasks for furniture, of excellent combinations. The styles are magnificent, and the shades beautiful; and altogether the goods are of unquestionable merit.

HOLDSWORTH, JOHN, & Co., Halifax. (166, Classes xii. and xv., p. 494.) For damasks and other furniture cloths which are well made, and of good colours, and considerable variety; some of the styles being very elegant.



HOOPER, G., CARROS, & TABOURIER, Manufacturers, Paris. (1625, France, p. 1255.) For a great variety of light goods of the *barège* class, plain, checked, and brocaded, of excellent combinations. The cloth called '*Bresilienne*,' though very difficult of execution is admirably worked. Medal awarded in Class xiii.

HORSFALL, J. G. & Co., Manufacturers, Bradford. (174, Classes xii. and xv., p. 494.) For fabrics made entirely of wool combined with cotton and silk. The Jury have noted as particularly deserving of commendation the article denominated '*Saxony cloth*' for ladies' dresses. The weft is made from the finest Saxony wool and the warp from the finest Australian wool, both combed by hand. The *Cobourgs* in cotton warp, wefted with worsted, are admirable, and manifest a high degree of regularity, obtained by the excellence of the yarn employed, and the talent of the weaver. The '*Henrietta*' cloths are made from spun silk warps, and weft of the finest Saxony wool, and are distinguished by a softness combined with firmness of texture that has never been surpassed.

HOSEL, R. & Co., Chemnitz. (86, Saxony, p. 1108.) For damasks of superior manufacture.

JOWETT, THOMAS, & Co., Manufacturers, Bingley, near Bradford, Yorkshire. (144, Classes xii. and xv., p. 492.) For a great variety of articles produced from alpaca weft and silk and cotton warps, plain and figured. These goods are very well made and show a good lustre. A new fabric of silk warp and linen weft is very neat, and affords encouragement for increased attempts in this direction.

KAY, RICHARDSON, & WROE, Manufacturers, Manchester. (186, Classes xii. and xv., p. 495.) For a very admirable range of *Chiné* goods produced from combinations of worsted, cotton, silk, and linen, with printed warps. These are distinguished by the excellence of the design and the economy of their production.

KNUEFFER & STEINHAUSER, Manufacturers, Greiz. (528, Prussia, p. 1080.) For merinos and brocaded *Satins de Chiné*.

LOHSE, EDWARD, Manufacturer, Chemnitz. (85, Saxony, p. 1108.) For damask goods made with worsted and cotton, and worsted and silk. Their designs are in good taste, the combination of colours and materials very creditable, and the weaving of superior regularity.

M'CREA, H. C. & Co., Manufacturers, Halifax. (135, Classes, xii. and xv., p. 491.) For damasks of great excellence.

MATHIEU, ROBERT. (France, 1443, p. 1245.) For merinos of superior manufacture.

MILLIGAN, WALTER, & SON, Manufacturers, Bingley, Yorkshire. (140, Classes xii. and xv., p. 492.) For a series of embroidered alpaca goods produced by a process which they have patented; a style of manufacture noticeable for its elegance and novelty. The patterns are printed on white silk, and the greatest possible accuracy is necessary in the weaving, in order that the printing blocks may fit; this point has been very successfully accomplished. All the designs are neatly executed, and the whole of the goods shown by this firm are highly creditable to their ingenuity and industrial skill.

MOLLET-WARME, BROTHERS, Manufacturers, Amiens. (648, France, p. 1109.) For goods composed of worsted mixed with silk, largely used for foreign consumption. The designs are in excellent taste, and the fabrics of beautiful texture.

MORAND & Co., Manufacturers, Gera. (731, Prussia, p. 1090.) For draps d'été, or summer cloths twilled like merinos, very creditable in their manufacture.

**MOURCEAU**,—Manufacturer, 27, Rue du Mail, Paris. (1668, France, p. 2256.) For a remarkable exhibition of stuffs for furniture, hangings, screens, table covers, &c. The goods manifest an eminent superiority in their manufacture, being stout, woven with great care and peculiarly rich in their effect. The colours are beautiful, perfectly shaded, and the designs indicate an artistic taste. This species of manufacture is adapted mainly for the saloons of the rich and the elegant.

**PATURLE-LUPIN, SEYDOUX, SIEBER, & Co.**, Manufacturers, Paris. (1381, France, p. 1242.) This firm has long been celebrated for the decided superiority of its manufactures, and the fabrics now displayed, fully maintain its high position. The merinos are of various qualities and admirable manufacture, the finer goods being especially beautiful, and for evenness, softness, and fineness, never surpassed. The draps d'été, or summer cloths, are made with great skill. The mousselines-de-laines, composed entirely of wool, the barèges and chalés of wool and silk, and the bombazines are also of great excellence. The yarns of which all these fabrics are made, are most carefully spun from the choicest wool. The cloths are woven in the most perfect manner possible, and altogether, the members of the Jury cordially unite in awarding a Prize Medal to this firm.

**PEASE, H. & Co.**, Manufacturers, Darlington. (184, Classes, xii. and xv., p. 495.) For Cobourg cloths, single and double twill, worsted weft and cotton warp. The lower and middle qualities are much stouter than the majority of such goods, and are remarkably even and regular. The fine qualities are equally commendable.

**PESEL & MENUET**, Paris. (678, France, p. 1211.) For Cashmere fabrics of great fineness and regularity.

**PETIT-CLEMENT**, Manufacturer, Boult, Marne. (679, France, p. 1211. For merinos of excellent manufacture.

**PIN-BAYARD**, Manufacturer, Roubaix, (Nord.) (682, France, p. 1211.) For fabrics all wool of great excellence. The texture of the Satins de Chiné is magnificent, and the yarn employed in them is perfectly spun.

**RAND, JOHN & SONS**, Manufacturers, Bradford. (173, Classes xii. and xv., p. 494.) For a variety of articles made entirely of wool, and of wool combined with cotton and silk. The yarns employed are free from knots and irregularities, and the cloths produced are evidently woven with great care. The merinos made in French style are without defects. The Cobourg cloths made from worsted weft and cotton warp are very excellent specimens of a fabric most extensively used for dresses, and the cloths made from worsted weft and silk warp are remarkably soft, fine, and even. The whole of these goods evidence the perfection which has been attained in this department of the worsted stuff manufacture.

**ROGERS, GEORGE**, Manufacturer, Bradford. (142, Classes xii. and xv., p. 492.) For a series of Cobourg cloths, composed of worsted and cotton of various qualities, which are praiseworthy for the regularity and evenness of their texture, and the economy of production.

**SALT, TITUS**, Manufacturer, Bradford, Yorkshire. (139, Classes xii. and xv., p. 491-92.) For a complete series of alpaca and mohair manufactures, (a branch of business carried on almost exclusively in England,) which illustrate very strikingly the great capabilities of these materials. The articles are of great variety, including fabrics composed of alpaca with cotton warps, and with silk warps, yarn dyed, and dyed in the piece; they are plain, twilled, figured, and Chinés, or made with printed warps. There are also goods composed of mohair with similar com-



binations. All are characterised by peculiar lustre and brilliancy, equal in many cases to silk; they are also remarkable for regularity of texture, softness, and fineness. It may be confidently stated that similar goods have never before been produced, and the great increase in the consumption of articles of this description among all classes of the community, renders the display an interesting and important one. Mr. Salt was one of the first to introduce alpaca wool into the Bradford trade, and by his enterprise and skill has mainly contributed to the extent and perfection which this department of industry has attained. In addition to the articles already mentioned, Mr. Salt exhibits an assortment of moreens used for furniture hangings; one series being made from English wool, and the other from the Russian Donskoi fleece wool. Both are worthy of notice for the perfection of their manufacture; the latter especially so, considering the difficulties in the way of successfully working up so coarse a material, which had never been combed prior to Mr. Salt having effected that object.

SCHLUMBERGER, GASPARD, & Co., Manufacturers, Mulhouse, (Haut-Rhin.) (1000, France, p. 1227.) For damasks for furniture hangings, composed of worsted and silk, woven with great regularity and displaying superior taste in the designs of the patterns, and the combinations of the colours. The effects produced are brilliant in the highest degree.

SCHWANN, KELL, & Co., Proprietors, Bradford. (141, Classes xii. and xv., p. 492.) The goods shown by this firm are different from those of any other Exhibitor, and confirm the observations already made on the variety of the fabrics produced by the Bradford manufacturers. They include Italian cloths, serges, says, and lastings, all worsted, and worsted combined with cotton, silk, and linen, of admirable manufacture, embossed alpaca lustres, alepinos de la reyna, velillos, &c. Some articles called 'Shanghae dresses,' plain and watered, made from silk and China grass, are exceedingly beautiful. The whole of these goods are adapted for foreign markets. Messrs. Schwann, Kell, & Co. are merchants, not manufacturers, but as they have, at great expense and trouble, directed the preparation of the articles exhibited, as to texture, combination of materials, and dyeing, the Jury wish to mark their sense of the enterprise, taste, and public spirit, shown by this firm.

SUGDEN, JONAS, & BROTHERS, Manufacturers, Dockroyd, near Keighley, Bradford. (167, Classes xii. and xv., p. 494.) For says, princettas, cubicas, shalloons, &c., made of English wool alone, and in combination with cotton. They are chiefly intended for foreign consumption, and they are of great regularity in the weaving, and highly creditable to the producers.

TREMEL, A. & Co., Manufacturers, Bradford. (147, Classes xii. and xv., p. 493.) For goods made chiefly for foreign consumption, consisting of worsted, alpaca, and mohair manufacture, shot with cotton, silk, and linen. The fabrics of these Exhibitors are commendable for their variety, good texture, and economy of production.

VOGEL, WILLIAM, Manufacturer, Chemnitz. (89, Saxony, p. 1108.) For damasks of great merit in their styles, colours, and combination of materials.

VOLNER, Manufacturer, Moscow. (190, Russia, p. 1372.) For plain de laines, and Cashmere d'Ecosse, made entirely of wool, which are distinguished by great regularity of manufacture. The 'Satins de Chiné' are nearly perfect in their make, and the colours are decidedly good. Bearing in recollection that Russia is



only starting in this species of manufacture, the results now exhibited are quite wonderful.

WEISSFLOG, E. T., Manufacturer, Gera. (720, Russia, p. 1090.) For merinos and brocaded 'satins de Chiné.' Very superior fabrics, and the patterns elegant and tasteful.

WINKLER & SON, Manufacturer, Rochlitz. (91, Saxony, p. 1109.) For display of Chambard fabrics, merinos, &c., of good manufacture, and for their economy of production.

ZIEGLER & HAUSSMANN, Manufacturers, Glauchau. (92, Saxony, p. 1109.) For merinos, all wool, remarkably well made; 'satins de Chiné' plain and brocaded; and figured goods, made of a combination of worsted and silk. All these are of good texture and commendable designs.

*The Jury make Honourable Mention of the undermentioned Manufacturers:—*

BOTTOMLEY, WILKINSON, & Co. (165, Classes xii. and xv., p. 493-4.) For satin-faced figured goods made with worsted and cotton. These goods are exhibited by Mr. Jacob Behrens, Merchant.

BOUCHART-FLOREN, Tourcoing, (Nord.) (1103, France, p. 1230.)

CLOUGH, ROBERT, Keighley. (151, Classes xii. and xv., p. 493.) For his merinos made from English long wool.

CRAVEN, J. & SON, Prospect Mill, Thornton. (149, Classes xii. and xv., p. 493.) For excellence of manufacture of Orleans cloth composed of worsted and cotton.

DALBY, JAMES, Bradford. (152, Classes xii. and xv., p. 493.) For figured fabrics composed of worsted and alpaca, with cotton and silk warps.

DRUMMOND, JAMES, Bradford. (150, Classes xii. and xv., p. 493.) For figured fabrics composed of worsted and alpaca, with cotton and silk warps.

ECROYD, WILLIAM, & SON, Lomeshaye, near Burnley. (130 A., Classes xii. and xv., p. 491.) For fabrics, including cobourgs and mousselines-de-laines made of worsted and cotton; bunting cloths for naval flags and signals, and made with great caré. (Medal awarded in this Class for carded and Genappe yarns.)

GREEN, R. F., & SON, Manufacturers, Leeds. (65, Classes xii. and xv., p. 488.) For Orleans cloths of excellent manufacture.

GUILBERT & WATEAU, Manufacturers, Paris. (860, France, p. 1221.) Their fabrics are of such a character as to merit commendation.

HARRIS & FISON, Bradford. (145, Classes xii. and xv., p. 492.) For a new and perfectly original fabric, made with weft spun from the down or fur of the Angora rabbit. It is exceedingly soft, and much resembles Cashmere. As an experiment to introduce a new material, it is very interesting and worthy of encouragement.

HOADLEY & PRIDIE, Damask Manufacturers, Halifax. (128, Classes xii. and xv., p. 490.)

KERSHAW, S. & H., Laisterdyke, near Bradford. (161, Classes xii. and xv., p. 493.) For excellence of manufacture of Orleans cloth composed of worsted and cotton.

MILNER, JOHN, & Co., Clayton, near Bradford. (168, Classes xii. and xv., p. 494.) For excellence of manufacture of Orleans cloth composed of worsted and cotton.

SCHEPPERS, F., Loth Brabant. (497, Belgium, p. 1166.) For a great variety of woollen stuffs, &c., which evince considerable merit.

SHEPARD & PERFECT, Damask Manufacturers, Halifax. (131, Classes xii. and xv., p. 491.)

TAYLOR, J. & SONS, Damask Manufacturers, Halifax. (88, Classes xii. and xv., p. 489.)

WARD, J. W., Damask Manufacturer, Halifax. (134, Classes xii. and xv., p. 491.)

WILSON, J. Ovenden, near Halifax, Manufacturer. (138, Classes xii., and xv. p. 491.) For ponchos of regular make, well adapted to the markets for which they are intended. An article of novel and unique character, contributed by Russia, deserves especial notice. It is made of camel's hair, spun by hand, and is produced by the Bashkirs, a wandering tribe on the banks of the Caspian Sea. The yarn is of astonishing regularity, and the texture remarkably good. The dresses made of it, the Jury are informed, are intended for Her Majesty the Queen of England.

HIS ROYAL HIGHNESS PRINCE ALBERT exhibits in Class xii. (p. 495.) Cashmere brocade fabrics, manufactured by Thomas Gregory & Brothers, of Shelf, near Halifax. These goods are composed of silk warp, and weft of wool, shorn from the Cashmere goats, in Windsor Park, the property of His Royal Highness. The Jury have examined these goods with peculiar pleasure as being the first made from Cashmere wool, grown in this country, and as one amongst innumerable manifestations of the deep and active interest which His Royal Highness has ever taken in promoting and encouraging the manufactures of this country. Viewing these goods as distinguishable for the novelty of the material employed, and the opening thereby offered for the production of a new class of fabrics, the Jury have unfeigned pleasure in drawing attention to this contribution.

#### WORSTED [AND WOOLLEN\*] YARNS.

In reporting upon worsted, woollen, alpaca, and mohair yarns, we have agreed to class them under different heads, irrespective of the district or country whence they come, and thus to speak of the merits of each spinner's yarn under the division of which it formed a part. The Jury make no Report upon what are generally called Berlin or embroidery yarns, although in the English and foreign departments many samples were shown, which, so far as the character of the yarn (irrespective of colour) is concerned, were generally good; but as its merit depends to as great, or even greater, extent on shades of colour than on the character of the yarns, it was determined to leave the matter to be decided by other parties more competent to appreciate their peculiar excellence.

The Jury have divided the yarns which they considered within their province into worsted, woollen, alpaca, mohair, cashmere, and mixture yarns, white and coloured. The worsted yarns again, although all come under the same general term yet being different in character, require to be mentioned separately. One class, which is the most numerous, the Jury will call Merino Yarns; another, Lustre Yarns; a third, Genappe and Small Ware Yarns.

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\* Woollen Yarns are also included under this head in the Jurors' Award, but as these Yarns do not relate to the subject of this work, that portion which applies to them has been omitted.

There might, perhaps, have been a further distinction made in the merino yarns, namely, between such as were combed by machinery and those which were combed by hand; but as this distinction was not in all cases expressed by the Exhibitors it has not been adopted.

With these preliminary remarks the Jury begin their Report on worsted merino yarns. Of these there are a larger proportion than of any other, principally from France, the districts included in the Zollverein, and Austria. There were also one or two samples deserving of note shown by English spinners, and one sample by a Russian establishment. The samples of 160 weft shown by J. RAND & SONS, and of 144 shown by H. PEASE & Co., are very good indeed; but although deserving great credit as specimens of throstle-spun yarn, yet the Jury were of opinion that the same yarn, had it been prepared on the French principle, spun on the mule, and equally well managed, would have been improved in character. The mule, which is in all but universal use on the Continent for spinning short-stapled wool, is (combined with the French mode of preparation) better than the throstle for the production of yarns adapted to the manufacture of merino cloths; and this circumstance, no doubt, has been the chief cause why the French have been able to take the lead through the world in merinos and mousseline-de-laine fabrics. The best specimens of yarn, both as to softness, evenness, and fulness of thread for the number, belonged to PATURLE-LUPIN, & Co.; computed by the English number it was No. 178, or 200 millimetre, and we have never seen a more perfect specimen of weft yarn.

The French house which exhibited the nearest approach as to number was that of ROGER BROTHERS & Co.; but their yarn was not made from so fine a wool as that of Paturle-Lupin & Co., and certainly not so well managed in the spinning; they were, however, upon the whole pretty good, especially their finest numbers of warp yarn.

The samples shown by the house of BILLIET & HUOT were equal to the best in the spinning of the yarns, although not spun to so high numbers. The finest number of merino weft yarn exhibited by the LEIPZIG SPINNING COMPANY (165, English) was very good, and deserving of great praise, being very little inferior to that of Paturle-Lupin & Co. In addition to those already named, there were very good specimens of merino yarns shown by the following houses,—

HINDENLANG, sen., LA CHAPELLE, & LEVARLET, LUCAS BROTHERS, PRADERI & Co., CAUVET, FOURNIVAL, ALTMAYER, & Co., HARTMAN & Co., DELEGUE & Co., A. THUM, L. THOMAS, VOESLAU WORSTED YARN SPINNING COMPANY, A. SCHMIEGER, C. F. SOLBRIG, PETZOLDT & EHRET, WEISS, Jr. & Co.

The Jury may also here mention a rather peculiar kind of *barège* yarn, said to be spun by the hand, exhibited by LANTEIN & Co., used in the manufacture of very fine gauze cloth, chiefly for men's veils. In the medium numbers of merino yarns nothing appeared superior in management to a specimen of No. 72, shown by Mr. PRELLER, but spun by JONAS SMITH & SONS; this yarn was shown in connection with specimens of tops, combed by the patent machine of Mr. Preller, and if these were an average of the work done by this machine, it has almost attained to perfection in clearing the wool from noil, as well as leaving the staple unbroken. The No. 72 named appeared to be made from an ordinary quality of Australian wool, yet the yarn was clearer, fuller, and more even than any other we examined of the same number. Perhaps it ought to be stated here, that as



Mr. Preller, one of the Jurors, is a relative of the Exhibitor, he gave no opinion in this case, but left the other members to themselves in the examination of this specimen.

Although there were many more Exhibitors of merino yarns beside those named, whose yarns were upon the whole good, yet the Jury are of opinion that the houses already named, excel the remainder in one or other either in warp or weft yarns.

In lustre worsted yarns very few samples were shown, as compared with the merino yarns; those exhibited by J. FOSTER & SON, were thought the best. There was a good sample shown by WILLIAM THOMAS, dyed in the preparation.

The specimens of hosiery yarn shown by A. BURGESS & Co., BREWIN & WHETSTONE, and WHITMORE & Co., were good, and gave full proof of the deserved fame which the Leicester houses have long maintained for the production of this class of yarns; there were also good samples of this kind shown by R. POPPLETON and J. G. SCHMIDT, jun., & SONS.

There were very few Exhibitors of Cashmere yarns; of these those exhibited by HINDENLANG, sen., were the best. Their finest number was a beautiful specimen.

In yarns made from a mixture of silk and wool (mixed in the carding and preparation), there were samples shown both white and coloured, which, so far as we were competent to form a judgment, were very good; but as this branch of the worsted trade is comparatively new (at all events to us), the Jury could not venture to give an opinion as to the relative merits of the different yarns of this class.

In alpaca and mohair yarns the samples shown appeared to be very good, both in evenness of thread and mixture of colours, for the various descriptions of fancy goods made from them. This branch of trade, although comparatively new, has made rapid strides towards perfection. A few years ago these raw materials were of little or no value, but through the skill and enterprise of those engaged in this trade, amongst whom Mr. T. Salt must by universal consent have a pre-eminent position, they have now become very valuable; and it cannot be doubted, from the beautiful specimens exhibited, that they are destined to maintain a high price as compared with ordinary qualities of sheep's wool. In the first stage of its progress alpaca yarns were found to be very imperfect in their evenness for the manufacture of plain goods: this obstacle is now entirely overcome, and every specimen of alpaca yarn we examined was all but perfect in this respect.

Although the wool in its natural state is either black, brown, or white, yet from these three colours an almost endless variety is produced, enabling the manufacturer to secure shades adapted to all seasons. The specimens of fine numbers, exhibited by T. SALT and J. FOSTER & SON, show that it is capable of being spun so small in the thread, as to render it available either alone, or in combination with Cashmere yarns, or silk for fabrics of the lightest description.

Most of the samples of mohair yarn exhibited, single and folded, were very good, both in lustre and evenness of thread, especially those shown by T. SALT, J. FOSTER & SON, STOWELL & SUGDEN, and TOWNEND BROTHERS. The mohair poplin yarn made by the last-named house, is the only yarn of this description prepared for the manufacture of poplin fabrics, and appeared perfect; they had also some beautiful specimens of coloured mohair yarns, suited for the small ware trade. There were also very good specimens of alpaca and mohair yarns exhibited by—

D. W. SHARP, J. WHITLEY, W. MILLIGAN & SON, and BAUGHEN BROTHERS.

The Genappe yarns shown were numerous and generally excellent in manage-

ment: in the finer numbers of this class there were very good specimens shown by TOWNEND BROTHERS, and J. AKROYD & SON. The variety of small-ware yarns shown by J. SUGDEN & BROTHERS was very great, and their general management must give them a good position in the market for this class.

The Jury recommended as deserving of Prize Medals the exhibitors named below, who, to the best of their judgment, excel in this class of yarn.

AKROYD, J. & SON, Halifax. (No. 130, Classes xii. and xv., p. 76.) For carded and Genappe yarns.

BAILLIET & HUOT, 43 Rue du Sentier, Paris. (No. 1550. France, p. 248.) For merino yarns.

ECROYD, W. & SON, near Burnley. (130A, Classes xii. and xv.,) for carded and Genappe yarns.

FOSTER, J. & SON, Manufacturers, Black Dyke Mills, near Bradford. (No. 143, Classes xii. and xv., p. 77.) For alpaca, mohair, and lustre yarns.

HINDENLANG, sen., Cramoisy (Oise,) and 24 Rue des Vinaigriers, Paris. (No. 1269, France, p. 243.) For Cashmere and merino yarns.

LEIPSIK-SPINNING Co., Puffendorf. (Saxony, No. 44, p. 275.) For merino yarns.

LUCAS BROTHERS, Bazancourt (Marne.) (No. 1331, France, p. 244.) For merino yarns.

PATURLE-LUPIN, SEYDOUX, SIEBER & Co. le Cateau. (No. 1381, France, p. 245 ) For merino yarns.

PEASE, H. & Co., Manufacturers, Darlington. (No. 184, Classes xii. and xv., p. 78.) For merino yarns.

RAND, J. & SONS, Bradford, Yorkshire. (No. 173, Classes xii. and xv., p. 78.) For merino yarns.

ROGER, BROTHERS & Co., Trie Château (Oise.) (No. 1449, France, p. 246.) For merino yarns.

SALT, TITUS, Bradford, Yorkshire. (No. 139, Classes xii. and xv., p. 77.) For alpaca and mohair yarns.

SOLBRIG, C. F. Chemnitz. (No. 47, Saxony.) For merino yarns.

STOWELL & SUGDEN, Bradford. (No. 496, Classes xii. and xv.) For mohair yarns.

SUGDEN, J. & BROTHERS, Dockroyd Mills, near Keighley, Bradford. (No. 167, Classes xii. and xv., p. 77.) For Genappe, mohair, and poplin yarns.

TOWNEND BROTHERS, Cullingworth, near Bingley. (No. 162, Classes xii. and xv., p. 77.) For Genappe and mohair yarns.

The Jury also desire to make Honourable Mention of the two following houses :—

CAUVET, Chantilly near Paris. (No. 1138, France.) For merino yarns.

FOURNIVAL, ALTMAYER, & Co. (No. 221, France.) Rethel (Ardennes). For merino yarns.

## PARIS EXHIBITION.

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### REPORT OF THE DEPUTATION APPOINTED BY THE BRADFORD CHAMBER OF COMMERCE.

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The Council by a Resolution passed on the 1st of October, 1855, in accordance with the suggestions of the Board of Trade, appointed Messrs. Samuel Bottomley and Edward Waud, of Bradford, and Mr. John Wright Child, of Halifax, together with the Secretary, a Deputation to proceed to Paris, for the purpose of examining the various kinds of machinery for producing worsted manufactures, together with the manufactures themselves exhibited in the Palais de l'Industrie.

The Deputation arrived in Paris on the 13th of October.

They were occupied on the 15th with a general survey of the whole of the Exposition, and in making the necessary arrangements for a systematic examination, and in endeavouring to procure free access to those articles which were enclosed in cases; and although Mr. Cole gave an order for their inspection, they only received permission to have the cases opened at a late period of the examination.

The Deputation were occupied several days in pursuing the object of their mission, and occasionally received the valuable assistance of the President of the Chamber, Samuel Smith, Esq., and other gentlemen from this district, who were at that time in Paris; and they also had the services of Messrs. George Howitt and Robert Smith, who have acted as the agents for the Exhibitors from Bradford and Halifax.

After a general survey of the goods exposed, the Deputation came to the conclusion that this district had nothing to learn from other countries as far as the manufacture of mixed wool and cotton fabrics is concerned, and they beg to congratulate the trade upon the high position it occupies in that department. However, on examining goods made of wool only, or of wool and silk mixed, the Deputation are quite ready to acknowledge the superiority of the French and some other continental nations.

Concluding that they were sent principally for the purpose of discovering the cause of that superiority, they devoted a large portion of their time in trying to find out, if it were possible, why we are unable to compete with our neighbours.

The labours of the Deputation were naturally divided into four distinct heads, viz.—

1st. Wool.

2nd. Machinery: including Machines for carding, combing, preparing, spinning, and weaving.

3rd. Tops, Warp, and Weft.

4th. Woven and dyed Fabrics.



## 1st. WOOL.

No part of the Exhibition has occupied a greater share of their attention than the wool exposed from all parts of the world, and, after giving a mere passing glance at the English and Australian wools, the qualities of which are too well known here to require any comment, they beg to call the attention of the trade to the annexed epitome of their observations upon Continental, and more particularly upon French wools, many of which well deserve the especial notice of the staplers and spinners of this district.

They are not aware that any important quantity of French wools has ever come into this market, although many of their sorts possess qualities which peculiarly fit them for our manufactures. And the Deputation feel no excuse necessary for entering rather minutely upon this part of their investigation. The duty on exportation of wools being only nominal—namely, one penny farthing per hundred weight—there is no impediment on the part of the French government to their being imported into England.

Of French wool there was indeed a great variety, many of them of beautifully fine and long fibre, suitable for combing purposes, and well adapted for the manufacture of warps; amongst others were noticed the following as deserving particular attention:—

No 447. Colonie Agricole de Petit Bourg (Seine et Oise).—One specimen of wool grown in France from Cotswold sheep, imported in 1854, of a staple equal in length to Lincoln wool, but by no means of such intrinsic worth.

Another specimen from Cotswold sheep of an earlier importation, but greatly impaired, being very hard and harsh, and not at all suitable for the manufacture of Orleans or other low goods. From the appearance of this specimen it would seem as if the climate were unsuitable for such deep grown wools, hence probably its depreciation.

No. 627. Bergerie Impériale de Rambouillet (Seine et Oise).—Eight samples of well-bred merino wools, admirably adapted for weft purposes.

Prize Medal, London, 1851.

No. 636. Bergerie Impériale de Gevrolles (Côte d'Or).—Seven specimens of wool, six of which were of a very useful class, and well adapted for the manufacture of Bradford goods.

Also, one about four or five inches long in staple, of great lustre, and nearly equal in fibre to merino. All this class well adapted for warp.

No. 654. Germain frères à Ligny (Meuse).—A beautiful exposition of fine wools, suitable for warp and weft. Specimens of top, warp and weft yarns, also exhibited, but no access for closer examination could be obtained.

No. 669. Graux à Juvincourt (Aisne).—Washed and unwashed wools, among which was noticed one especial sort about four inches long, of ordinary South-down quality, but almost as lustrous as mohair and as soft as alpaca.

No. 685. Malingié Paul, à la Charmoise (Loire et Cher).—Exhibits wool very like those of the west of England. (6 prizes.)

No. 694. Parpaite aîné à Carignan et Messincourt (Ardennes).—A great variety of wool admirably adapted for warp and weft. (9 medals.)

Of Silesian and Austrian wools several cases were noticed, but as their nature is so well known to the trade, it will be unnecessary to enlarge further on them than by giving the numbers of those cases examined, and the names of the proprietors.

- 190. (Prussia) Administration de la Bergerie Royale à Frankenfelde (Brandebourg)
- 191. Collin à Wollin près de Gramsow (Brandebourg).
- 192. De Dedovic à Langen-Oels près de Zobten (Basse Silésie).
- 194. Heller à Chrzelitz près de Zulz (Silésie).
- 198. Lehmann à Nitsche près de Schmiegel (Posen).
- 204. Rudzinski de Rudno à Liptin près de Katcher (Silésie).
- 107. Thaer à Mœglin (Brandebourg).
- 238. (Austria) La Société Impériale d'Agriculture pour la Styrie à Gratz.
- 272. Cte. de Thun Hohenstein de Bodenbach.
- 815. (Prussia) Hanff and Cie. à Berlin.

The Tuscan wools presented no features of usefulness to the worsted trade, and the Spanish wools, although well represented, are not of a class suitable to our trade.

Of Canadian wools, Messrs. Barber Brothers sent specimens well adapted for combing purposes. The Deputation had not before seen any sample from our Canadian colony, and they think it probable that if the attention of the trade were drawn to this new source of supply, a large and mutually profitable business might arise from this favourable Exposition.

From India there were exhibited specimens of very ordinary character, and not at all adapted for worsted purposes.

Australian wools were well represented ; but for the reason before stated no particular remarks were made on them ; and the Deputation have only to draw attention to one specimen of Van Diemen's Land wool, No. 32, exhibited by Messrs. Dickenson and Hewart, as a splendid specimen for warp purposes.

Before closing their remarks on this the first division of their labours, the Deputation beg to observe that, as far as wool is concerned, the superiority of the French merinoes appears in a great measure to arise from the combination of their fine long wools for warp with colonial wool for weft.

#### 2ND. MACHINERY.

There were no machines for washing wool exhibited, worthy of any comment.

*Of Carding Engines*, none were shown superior or even equal to those already in use in this district.

*Of Preparing, or Opening Machines*, as distinct from Carding Machines, there were only two processes noticed by the Deputation ; one, the ordinary sheeting machine, steam heated, and well known here (not numbered) ; the other, on the principle of the figure heckle, which has been long known and used here in the flax and hemp trade, and occasionally for worsted, for the longer staples of which it appears to be well adapted.

*Of Combing Machines*, three only deserve remark ; two of which, Heilman's and Preller's, are well known in England ; the other, Dujardin Collette à Roubaix (No. 1549) in which there is one new feature, viz., that after the wool has been fed upon the circle, a working comb acts upon the ends of the fibres outside the circle, and the wool abstracted by this working comb is replaced with the noil end upon the circle. This machine was working at a disadvantage, inasmuch as the wool under operation was too long in fibre for the machine as then constructed or adjusted.

*Of Preparing, or Drawing Machines*, there were none exhibited that were adapted for the long wools generally used in this district. But for fine short wools a class

of machinery is used of which little is known here. In the first boxes of the preparing or drawing process a double draft in each box is general, and the porcupine roller is common in all, even down to the roving; and oscillatory rollers to roll and consolidate the thread are substituted for twist.

The Deputation did not observe any machine or throstle suitable for the spinning of long wools, although it is well known that such machines are sent from this district into France for that purpose.

*Mule Spinning* for fine wools appears to be all but universal; there were, however, no machines of this description shown equal to those which are now constructed for the cotton trade in England.

*Of Looms* for weaving, those exhibited were generally of old construction; there were some exceptions, one of which is that of Armegaud, ainé Paris (not numbered) a loom intended for figured goods, combined with a considerable number of healds, which were to be worked by a Witch engine at the side of the loom, and a figure to be produced by a Jacquard engine by electrical action; but this machine was unfinished when the Deputation left Paris. Another is that of Jac. Grasmayer (Reutte, in Tyrol) which shows a mode of working sixteen treddles or healds by only two tappets; these are deserving of attention for the production of figured goods, combined with healds, or for working a large number of healds in a simple manner.

*Of Jacquard Engines*, there were many examples, nearly all with wooden frames; but they deserve attention on account of the substitution of thin paper for cards, which is obviously of great advantage in elaborate designs.

These were accompanied by reading on, punching, and repeating machines, some of them of very excellent construction.

This completes the second part of the division—machinery connected with manufacture; but there is another machine used in the finishing of goods, viz., that of David Labbez & Cie., Sains-Richoumont, Aisne (not numbered), which deserves especial notice. It is a machine for removing noil or knot from the face of merinoes and other fabrics after weaving. By this machine the superfluities are sheared or shaven off in a very peculiar manner, at the same time the ground is *raised*, whereby a richer appearance is given to the cloth.

### 3RD. TOPS, WARP, AND WEFT.

There were many excellent specimens of tops, apparently combed for the special purpose of show; but by whose machines and how many times combed the Deputation could not, except in one instance, ascertain, nor had they an opportunity of learning the relative proportions of top, noil, and waste, but they believe the tops exhibited were much better combed than is usual for the general purposes of their trade.

Of the tops more particularly worthy of remark, the Deputation noticed the following:—

No. 6460. Prouvost et Cie, à Roubaix.—Thirteen specimens of white, four of coloured top; all exceedingly well combed.

The African bright.—The zigoe mottled like rainbow. All combed without oil.

The Egyptian very soft, and running to a brown grey.

No. 6063. Allart Rosseau et Cie, à Roubaix.—Twelve samples of white and one of brown top.



The Austrian and Silesian of very superior quality, all well combed; the noils generally short and nibby.

The Champagne wool runs a good length, and like South-down.

No. 6364. Jejeune Mathon, à Roubaix,—Case, presenting in top, Adrianople, English Down, St. Omer, Persian brown in yarns.

All kinds of mixture and every variety of yarns, from No. 30 upwards, principally in cop with hanks of mixed.

No. 6151. Cauvet, à Chantilly (Oise).—Samples of top combed by Preller's and Schlumbergers's machines. Also a great number of warp and weft yarns, single and two-fold, with an assortment of embroidery. Altogether of superior quality.

No. 6539. Tisserant à Cirés-les-Mello (Oise).—A case of excellent samples.

No. 6293. Hartmann et Cie, à Malmerspach (Haut-Rhin).—A good variety of warp and weft in spool and cop, very free from knots.

No. 6417. Oriolle fils et Cie, à Angers (Maine et Loire).—A great variety of fancy yarns well got up.

No. 6376. Lister and Holden, à St. Denis.—Very conspicuous in good top.

No. Paturle, Lupin Seydoux, Sieber et Cie., (Cateau, Dept. de Nord).—A large exposition of wool, top, and yarns of the best description.

The cloth very superior both in twill and satin, with class of colourings of the most excellent character.

No. 477. (Belgium) Francis Schepper, Loth, near Brussels,—A case containing eight specimens of top in different colours; also a great variety of mixed and other yarns, with samples of orleans, lastings, &c. (this case was inaccessible to the Deputation).

The *Yarns, Warp and Weft* were of a very commendable class. The specimens of wool, top, and noil exhibited by Messrs, Lister and Holden nearly assimilated to those made in our own country, except that these, as well as all other specimens, are combed without oil; a mode of combing which appears to be general, from the lowest to the finest qualities exhibited.

Of all kinds of *Mixed Yarns*, made from dyed wool and other materials, there was an endless variety, far beyond anything in use here. There was also a corresponding variety of knitting and embroidery yarns, all of which appear to be well got up.

Nearly all the specimens exhibited were mule spun, and they contained a great deal of twist, especially the warps.

#### 4TH. WOVEN AND DYED FABRICS.

The Deputation have devoted much care and attention to the examination of the various finished goods exhibited by French and other continental manufacturers, and have divided them under the following heads, viz.:—

1st. Fabrics composed entirely of Wool.

2nd. Fabrics composed entirely of Worsted, Alpaca, or Mohair Weft, in combination with Cotton and Silk Warps.

The superiority of the French is as marked in the First Class as that of Yorkshire manufacturers is in the Second. In the building itself, no comparison could be instituted between the two, for of dress goods, the warp and weft of which are both wool, only a few pieces of lastings, says, and single twilled merino were shown by Bradford exhibitors.

In the article of double twilled merino, so extensively produced in France, not a single piece was shown by this district.

The same remark applies to fancy goods, made from all wool. The Deputation consider it unnecessary to dilate upon the beauty and excellence of the French and Saxon merinoes.

It has been supposed that the French possess peculiar advantages for this important branch of the worsted trade, in the quality and spinning properties of some of the French wools, which render them peculiarly adapted for warps; that their method of sizing renders the yarns both flexible and soft; that their processes of preparing and spinning are superior to ours; and finally, that the drawback or bonus allowed by the French government rendered competition on the part of our manufacturers a matter of considerable difficulty. It was the object of the Deputation to discover whether the French do possess any such advantages, and having detailed the result of their labours under the different heads of wool, machinery, tops, and yarn, they leave it to the trade to determine whether this important branch of manufacture may not be successfully cultivated and extended in this district. The Deputation are inclined to think that there are no insuperable difficulties to prevent the most perfect success.

The French system of drawbacks so imperfectly known here will be found to be much less formidable than is generally supposed, and the Deputation beg to refer to the documents at foot, derived from authentic sources, and to the few observations they have considered it within their province to make upon them.

With reference to the fancy goods of all wool, and wool and silk, a few remarks will suffice. They are not goods sold to any very large extent in England, and their high prices will always be a barrier to their general sale. As to their elegance and beauty, there cannot be two opinions. The case, for instance, of Messrs. Ternynck Frères, of Roubaix, (No. 6531) is one in which there was scarcely a single objectionable piece, and the same applies to the goods shown by Messrs. Delattre père et fils (No. 6202); the effects are produced undoubtedly in a great measure by the richness of materials employed, entirely regardless of cost, but also by that harmonious and felicitous combination of colours for which our neighbours have always been distinguished.

Some nice cloths of the "Lasting" kind, used extensively for the ladies' boot manufacture, and also some double warp merinoes for ladies' mantles, were exhibited. The Deputation deem both worthy of consideration as being adapted to the worsted trade of this district.

In all fabrics composed of worsted, alpaca or mohair weft, with various combinations of cotton and silk warps, there was, as has already been observed, as great superiority on the part of our own productions as the French can claim for their manufactures composed exclusively of wool.

No prices were affixed to the French goods of this class, but from the fineness of the qualities, it might be concluded that they were rather goods made for the purpose of show than a veritable exposition of marketable productions.

Some goods exhibited from Prussia and Belgium, approached more nearly, though at a considerable distance, to the staple produce of this district.

Compared to the bulk of the productions of worsted goods, the French manufacturers have only shown few goods for the use of the middle and labouring classes. The Bradford show consisted mainly of such goods, and those shown were not

made specially for the Exhibition, but such as are usually found in the markets here. The Deputation have the authority of Mr. Howitt (to whose care the goods of this district were on both occasions entrusted) in stating that, although the collection of goods was far less extensive and various than that of 1851, the interest taken in the department by the visitors generally has been infinitely greater than at that time. If, as there is reason to hope, the result of the Exhibition should be a modification of the French laws, regulating the admission of foreign productions, the trade of this district will be greatly benefited by the opening of this new and immense market. The exhibitors will have then attained the grand object of their labour and expense, which was to show that excellence of manufacture could be combined with cheapness, and that goods well adapted to the wants of consumers could be produced at a cost which brought them within the reach of all classes of the community.

With reference to dyeing, the Deputation beg to observe that, although no comparison can fairly be instituted between goods made of wool alone, and goods made of mixed materials, yet there was nothing to lead to the conclusion that our dyers had failed to keep up the requirements of our trade.

The Exhibition by the Parisian dyers of all wool merinoes, and plain and figured satteens of fine qualities, was indeed extremely beautiful; that of Messrs. Terrier and Co., of Suresnes, near Paris, (No. 3057,) pre-eminently so.

Some Prussian dyers also showed delaines presenting features of superior excellence; but in *mixed* fabrics where the difficulties presented by the combination of animal and vegetable substances have to be overcome, there was nothing in the Exhibition equal to the colours and effects produced by the Bradford dyers. The black goods were particularly attractive to the scientific visitors of the Exhibition, and in colours it was manifest that the superiority of this district so noticeable in the Exhibition of 1851, was still kept up; indeed for all fabrics and colours in *ordinary* use, it may still be affirmed that our dyers can produce from goods made with white cotton warp and worsted weft, shades equal or very nearly equal in beauty and permanence, to those produced by the foreign dyers from goods made entirely of wool.

*Drawback.*—The French worsted manufacturer is said to derive an advantage from the “prime” or bonus allowed by his government upon the exportations of his yarns and goods, which must be taken into consideration in estimating the difficulties our manufacturers have to contend with in their competition, but upon close examination of the official tables, it appears that this advantage is more apparent than real. The Deputation have reason to believe that the French manufacturer imports the greatest part of his wool for weft, even if he employs nothing but the home-grown article for warp. For these imports he is obliged to pay, if imported in French bottoms, an *ad valorem* duty of 20 per cent., which upon the actual value of the manufactured article cannot amount to less than 5 or probably 6 per cent.

The drawbacks upon the great bulk of merinoes exported to this country range from  $5\frac{1}{2}$  per cent. to  $8\frac{1}{2}$  per cent. upon their value; thus barely equalizing the disadvantage the French manufacturer labours under from the duty imposed upon the raw material which has become perfectly indispensable to his production; this duty must at the same time injure the manufacturer by its tending to raise artificially the price of the home-grown wools. The bonus allowed upon the exportation of yarns appears to be more considerable than upon goods, without



having given a stimulus to their being used by our manufacturers. The whole system of prohibition of manufactures, of import duties on raw materials, combined with a sliding scale of drawbacks for exports, is so much in favour of the smuggler and of the dishonest exporter, that it is no doubt doomed to immediate revision, if not to complete abolition, by the enlightened originator of the splendid Exhibition of which your Deputation have had the privilege of studying, and imperfectly describing, a single but interesting department.

In conclusion, the Deputation desire the trade to remember that their province was only to examine and give a description of the various products exhibited in the Palais de l'Industrie, and a short account of the machinery which they inspected, pointing out where any improvements were apparent. It does not seem to be within their province to make any recommendations.

The following Table, furnished by Charles Walker, Esq., Bradford, exhibits the prices obtained for Wool on a Farm, in Lincolnshire, from 1764 to 1836.

A. D.	WHEN SOLD	£	s.	D.	A. D.	WHEN SOLD	£	s.	D.
1764	Aug. 27 ..	1	0	0	1803	Aug. 18 ..	1	9	0
1765	June 24 ..	0	18	0	1804	July 16 ..	1	11	6
1766	" " ..	0	15	9	1805	" 10 ..	1	14	0
1767	" " ..	1	0	0	1806	Sept. 6 ..	1	13	0
1768	" " ..	0	19	0	1807	" 12 ..	1	4	0
1769	Oct. 25 ..	0	16	0	1808	Aug. " ..	1	3	0
1772	" " ..	0	18	0	1809	July 11 ..	1	8	6
1773	" " ..	0	16	6	1810	" 23 ..	1	13	0
1774	Aug. 8 ..	0	16	6	1811	Sept. 6 ..	1	6	6
1775	July 12 ..	1	0	0	1812	July 18 ..	1	10	6
1776	" " ..	1	0	0	1813	" 24 ..	1	15	0
1777	" " ..	1	0	0	1814	" "	2	2	0
1779	Aug. 24 ..	0	13	6	1815	" "	2	16	0
1780	" " ..	0	13	6	1816	Not sold.			
1781	" " ..	0	14	0	1817	July 11 ..	1	15	6
1783	July 10 ..	0	15	6	1818	Aug. 27 ..	2	18	0
1784	" 9 ..	0	18	0	1819	Oct. 22 ..	2	3	0
1785	" " ..	0	17	0	1820	Aug. 14 ..	2	1	0
1786	" 6 ..	0	17	0	1821	Dec. 26 ..	1	9	6
1787	June 30 ..	1	0	0	1822	July 20 ..	1	9	0
1788	July 5 ..	1	0	0	1823	Aug. 15 ..	1	9	0
1789	" 4 ..	0	19	6	1824	Sept. 20 ..	1	13	0
1790	July 2 ..	1	0	0	1825	Sept. 20 ..	1	10	0
1791	" " ..	1	1	0	1826	" " ..	1	9	0
1792	" " ..	1	2	6	1827	Aug. ....	1	8	0
1793	" " ..	0	19	6	1828	Jan. 1829	1	4	0
1794	" 1 ..	1	0	0	1829	May 1830	1	4	0
1795	" " ..	1	1	0	1830	July 1831	1	11	7
1796	" " ..	1	3	0	1831	Nov. 1832	1	11	6
1797	" 6 ..	1	1	0	1832	Feb. 1833	1	13	3
1798	" " ..	1	0	0	1833	Sept. 1833	2	3	0
1799	Aug. 29 ..	1	1	0	1834	Sept. 1834	2	4	0
1800	" 4 ..	1	4	0	1835	Aug. 1835	2	2	0
1801	July 9 ..	1	8	0	1836	Dec. 1836	2	3	0
1802	Sept. 6 ..	1	10	0					

To bring down the last Table to the present time, Wm. Cheesebrough, Esq., Bradford, has very obligingly drawn up the ensuing one of the prices of Lincolnshire Wool.

A. D.	WHEN SOLD	S. D.	S. D.	A. D.	WHEN SOLD	S. D.	S. D.
1837	January ..	41/0	to 43/0	1848	January ..	24/6	to 25/6
"	July ....	30/0	to 32/0	"	July ....	19/0	to 21/0
1838	January ..	34/0	to 36/0	1849	January ..	20/0	to 21/6
"	July ....	41/0	to 43/0	"	July ....	29/0	to 20/6
1839	January ..	40/0	to 42/0	1850	January ..	14/6	to 26/6
"	July ....	38/0	to 40/0	"	July ....	24/0	to 26/0
1840	January ..	35/0	to 36/6	1851	January ..	26/6	to 28/6
"	July ....	29/0	to 31/0	"	July ....	27/6	to 29/0
1841	January ..	29/0	to 31/0	1852	January ..	27/6	to 29/0
"	July ....	27/6	to 29/6	"	July ....	27/0	to 28/6
1842	January ..	26/0	to 28/0	1853	January ..	32/6	to 34/0
"	July ....	25/6	to 27/6	"	July ....	35/6	to 37/6
1843	January ..	26/0	to 28/0	1854	January ..	36/6	to 37/6
"	July ....	22/6	to 23/6	"	July ....	25/0	to 27/0
1844	January ..	27/6	to 28/6	1855	January ..	28/0	to 29/6
"	July ....	28/6	to 29/6	"	July ....	28/6	to 29/6
1845	January ..	30/0	to 31/0	1856	January ..	29/0	to 31/0
"	July ....	29/0	to 30/0	"	July ....	35/0	to 37/0
1846	January ..	28/6	to 29/6	1857	January ..	44/0	to 45/0
"	July ....	26/6	to 28/6				
1847	January ..	26/6	to 28/0				
"	July ....	25/0	to 27/0				

From these two Tables of the prices of wool for the last ninety-two years, the following important deductions have been drawn:—In 1793 the Bank Restriction Act, to enable the Bank of England not to pay its notes in gold, being passed, the currency was depreciated, or the £1 sterling became of less value as compared with gold. This continued to 1819, when the Currency Act became law. In this interval (1793-1819) the price of wool advanced from 19s. 6d to £2 18s. a tod. From the year 1819, when the currency was restored to a gold standard, there was a gradual reduction of price down to 1849, with the exception of the years from 1833 to 1836, when the American United States Bank issued a remarkable amount of paper money, leading to speculation, rise in prices, and ending in the panic of 1837. The supply of gold between the years 1819 and 1849 not being in proportion to the expansion of trade, was, therefore, of increased value, which kept down the price of commodities, and led to such a gradual diminution of prices as that of wool from £2 13s. a tod in 1818, to £1 in 1848 and 1849. Whereas since the gold discoveries, gold being plentiful, there has been a gradual rise from £1 a tod to £2 5s., or 125 per cent. There can be no doubt that the increase of late years in the price of wool and other commodities is, to be attributed, in a great measure, to the gold discoveries, and whilst gold is so plentiful, and with the present Currency Laws, the price of wool will never be much lower. Of late years, the French worsted manufacturers have competed with us for our Colonial wool, thus increasing prices.

About the year 1770, England began to import wool. In the year 1800, a duty of five shillings and threepence a cwt. was imposed upon the import, which in 1813 was raised to six shillings and eightpence a cwt., and in 1819, to the excessive duty of sixpence per pound; in 1824, it was reduced to threepence per pound, and in 1825, to a halfpenny per pound on wool under the value of a shilling per pound, and a penny on wool above that price. The duty was removed in 1844.

The following Table gives the amount of Imports of Wool for Fifty Years.

YEAR.	LBS.	YEAR.	LBS.	YEAR.	LBS.
1771	1,829,772	1788	4,079,333	1805	8,069,793
1772	1,536,685	1789	4,013,114	1806	7,333,993
1773	1,477,284	1790	2,582,295	1807	11,768,926
1774	2,133,496	1791	3,014,511	1808	2,353,725
1775	2,031,973	1792	1,998,732	1809	6,845,933
1776	2,062,628	1793	4,263,498	1810	10,914,137
1777	2,853,065	1794	1,632,926	1811	4,739,972
1778	489,869	1795	4,362,069	1812	7,014,967
1779	519,664	1796	4,510,534	1813	no returns.
1780	323,618	1797	3,289,311	1814	15,712,517
1781	2,478,332	1798	4,577,106	1815	13,640,371
1782	991,510	1799	2,263,660	1816	13,636,241
1783	2,629,692	1800	8,609,368	1817	7,516,316
1784	1,602,674	1801	7,371,774	1818	14,051,788
1785	3,135,252	1802	7,669,368	1819	24,722,161
1786	1,554,637	1803	5,904,740	1820	9,789,020
1787	4,188,252	1804	7,921,595		

Table of Imports of Foreign and Colonial Wool, and the Exports of the same, and also of the Export of British Wool.

YEARS.	IMPORTS OF F. & C.	EXPORTS OF F. & C.	EXPORTS OF BRITISH	YEARS.	IMPORTS OF F. & C.	EXPORTS OF F. & C.	EXPORTS OF BRITISH
	lbs.	lbs.	lbs.		lbs.	lbs.	lbs.
1820	9,789,020	64,565	..	1839	57,379,923	695,049	4,603,799
1821	16,622,567	291,318	..	1840	46,880,745	1,014,625	4,810,387
1822	19,058,080	233,872	..	1841	56,170,974	2,564,455	8,471,235
1823	19,366,725	200,776	..	1842	45,881,639	3,637,789	8,578,691
1824	22,564,485	419,594	53,743	1843	47,785,061	2,734,541	8,179,639
1825	43,795,281	678,034	113,424	1844	65,079,524	1,924,826	8,947,619
1826	15,989,112	883,651	143,130	1845	75,551,950	2,609,161	9,060,588
1827	29,115,341	760,109	278,552	1846	65,255,462	3,011,980	5,851,888
1828	30,236,059	872,249	1,669,389	1847	62,592,598	4,809,725	5,550,680
1829	21,516,649	406,566	1,332,097	1848	69,343,477	6,540,410	3,978,842
1830	32,313,059	659,242	2,950,304	1849	76,768,647	12,450,497	11,200,472
1831	31,652,029	1,025,962	3,494,275	1850	73,326,726	14,388,683	12,001,799
1832	28,142,489	555,014	4,199,825	1851	83,311,975	13,729,987	8,573,103
1833	38,076,413	442,696	4,992,110	1852	93,761,458	11,316,933	13,919,277
1834	46,455,232	807,362	2,278,721	1853	119,333,439	11,735,367	6,671,410
1835	42,174,529	4,101,700	4,642,604	1854	106,121,995	24,509,263	12,988,930
1836	64,239,977	613,707	3,942,407	1855	99,300,446	29,412,466	16,191,767
1837	48,379,708	2,831,352	2,647,874	1856	116,211,392	26,679,793	14,378,774
1838	52,594,355	1,897,860	5,851,340				

The Table on the next page exhibits the Imports of Wool, in lbs. weight, in quinquennial periods, distinguishing the countries whence obtained.



COUNTRIES.	1800.	1805.	1810.	1815.	1820.	1825.	1830.	1835.	1840.	1845.	1850.	1855.
Russia ..	..	..	32,149	297,611	75,614	1,992,101	202,871	4,024,740	4,518,563	8,708,754	3,556,294	203,198
Denmark, &c. ..	819	445,125	379,095	498,695	13,527	558,012	180,097	367,875	611,482	1,331,014	1,429,885	1,554,681
Prussia ..	8,956	25,189	123,057	105,073	107,101	131,100	713,246	256,144	24,646	211,844	29,523	..
Germany ..	412,394	36,787	778,835	3,137,438	5,113,442	28,799,661	26,073,882	23,798,186	21,812,099	18,469,734	9,166,731	6,124,763
Holland ..	141,739	30,224	2,873	432,832	186,051	1,059,243	939,123	301,855	46,247	128,019	99,833	2,048,857
Belgium ..	1,583	8,344	41,407	6,264	19,015	22,266	7,745	231,222	134,095	398,226	409,803	1,191,460
Channel Isles ..	..	..	..	756,427	230,909	436,678	45,093	104,535	11,830	170	8,446	..
France ..	..	..	..	..	..	..	..	..	48,830	175,027	44,306	..
Portugal, Azores & Madeira }	1,731,934	200,366	3,018,961	1,146,607	95,187	953,793	461,942	683,231	374,915	786,374	1,503,415	837,142
Spain & Canaries }	6,082,824	6,858,738	5,952,407	6,929,579	3,536,229	8,206,427	1,643,515	1,602,752	1,266,905	1,074,540	440,751	68,750
Gibraltar ..	33,748	41,395	349,053	12,891	3,851	19,250	..	476,737	242,734	484,291	489,476	322,266
Italy ..	732	25,625	21,554	97,679	2,815	227,453	9,461	1,051,005	1,668,541	3,340,998	664,564	335,402
Malta ..	..	..	40,040	55,804	5,050	72,131	..	39,913	2,209	116,721	51,282	446,770
Turkey, Syria, Egypt }	17,153	9,548	..	12,513	189,584	513,414	..	1,281,839	655,964	1,639,450	448,455	604,123
C. of Gd. Hope & S. Africa }	..	..	29,717	23,363	13,869	27,619	33,407	191,624	690,013	211,678	1,447,683	1,495,499
Morocco & other parts of Africa }	..	..	..	..	..	..	..	5,102	756,424	3,550,605	5,725,746	11,075,965
East-Indies ..	..	..	701	..	8,056	..	..	295,848	2,441,370	3,975,866	723,449	594,533
China ..	..	..	..	73,171	99,415	323,995	1,967,309	4,210,301	9,721,243	24,177,317	39,018,221	14,283,535
Australia ..	..	..	167	..	139	70	..	14	15,793	18,280	17,582	517,137
N. American Col. }	..	..	1,217	..	760	..	1,725	2,029	3,286	4,916	5,728	..
West Indies ..	..	5,079	2,894	..	53	..	7,313	237,306	115,095	835,448	12,639	482,957
United States ..	173	225	..	8,533	578	80,468	1,148	18,760	9,182	114,749	69,572	..
Brazil ..	..	..	43,014	4,311	4,277	37	..	..	..	..	26,278	401,275
Uruguay ..	..	..	..	..	..	331,265	19,441	962,900	616,721	2,933,737	835,755	3,266,894
Buenos Ayres }	..	..	73,159	41,527	68,759	2	..	..	586,796	528,875	133,075	1,921,884
Chili ..	..	21,649	..	..	14,792	14,313	5,741	..	1,654,593	1,654,593	3,231,966	934,340
Peru ..	..	..	..	..	..	25,983	..	2,030,365	167,854	287,145	248,192	..
Other Parts ..	197,313	361,499	23,837	..	..	..	..	..	..	..	..	..
LBS.	8,609,368	8,069,793	10,914,137	13,640,371	9,789,020	43,795,281	32,313,059	42,174,529	46,880,745	75,551,950	73,326,726*	97,853,739*

\* These amounts are exclusive of Alpaca, &c.

Table of Imports of Foreign and Colonial Wool in 1856, in Bales.

## COLONIAL.

PORTS.	1852.	1853.	1854.	1855.	1856.
Sydney .. .. .	50,009	51,645	54,719	50,303	59,250
Port Phillip .. ..	61,664	69,310	65,199	65,287	59,620
Portland Bay and Port Fairy .. .. .				8,203	5,200
Van Diemen's Land ..	17,910	17,899	17,400	18,402	17,900
Port Adelaide .. ..	12,562	11,718	14,902	16,503	16,630
Swan River .. .. .	1,025	494	1,380	1,183	1,200
New Zealand .. .. .	2,080	3,203	3,001	2,990	6,840
Bales .. .. .	145,250	154,269	156,601	162,876	166,649
Cape of Good Hope, including Algoa Bay ..	21,005	22,998	27,280	38,150	50,580
Total .. .. .	166,255	177,267	183,881	201,026	217,220

## EAST INDIA AND CHINA.

1851.	1852.	1853.	1854.	1855.	1856.
Bales .. 12,550	22,156	36,193	44,180	43,174	45,550

## FOREIGN.

PORTS.	1852.	1853.	1854.	1855.	1856.
German .. .. .	36,151	26,992	24,584	14,481	18,401
Spanish and Portugal ..	8,747	11,384	5,425	4,760	8,029
Russian .. .. .	12,799	22,341	10,209	971	4,200
Egyptian .. .. .	5,174	6,155	4,552	4,235	4,400
Buenos Ayres and Monte Video .. .. .	4,661	10,055	5,717	6,291	5,200
Peruvian .. .. .	38,418	45,883	37,656	40,658	52,399
Barbary .. .. .	7,045	9,495	5,264	4,757	6,518
Turkey .. .. .	10,982	29,076	15,025	8,852	1,350
Italian, Greek, and Sundry .. .. .					11,768
Total .. .. .	123,977	161,381	108,432	85,005	112,265

Table of Imports and Exports of Foreign and Colonial Wool for Eight Months ending August 31st, 1857.

IMPORTS.		EXPORTS.	
	lbs.		lbs.
Hanse Towns & other parts of Europe ..	15,560,511	Hanse Towns .....	514,385
British Possessions in South Africa ....	8,110,572	Holland .....	405,444
British East Indies ....	8,670,303	Belgium .....	1,078,092
Australia .....	40,314,840	France .....	9,318,240
Other Countries .....	8,327,601	Other Countries ....	598,272
	80,983,827		11,914,433

It will be seen from the next Tables that a great increase in the export of wool to France and also to Belgium has taken place of late years. This has begun to alarm our manufacturers, not only as regards the increase thus occasioned in the price of wool, but also as to the safety of our trade in fine worsteds.

Table of Exports of Foreign and Colonial and British Wool in the following years, distinguishing the countries.

	1825.		1830.		1835.		1840.	
	FO.&CO.	BRIT.	FO.&CO.	BRIT.	FO. & CO.	BRITISH	FO. & CO.	BRITISH.
Germany.. ..	14	4,568	221,624	126,554	34,122	1,013	15,916	2,843
Holland ..	266,486	37,037	5,338	1,319,464	71,452	27,111	88,533	33,465
Belgium ..					205,962	3,076,368	558,297	4,108,316
France .. ..	21,929	14,996	..	1,275,760	513,307	1,521,388	180,566	664,699
Italy .. ..	..	..	..	7,394	70,001	..	1,820	..
United States..	385,166	22,564	425,616	219,169	3,199,376	10,048	169,437	504
Other Countries	4,439	34,259	6,664	10,963	7,480	6,676	56	560
	678,034	113,424	659,242	2,950,304	4,101,700	4,642,604	1,014,625	4,810,387

	1845.		1850.		1855.	
	FO. & CO.	BRITISH.	FO. & CO.	BRITISH.	FO. & CO.	BRITISH.
Germany.. ..	85,065	24,273	1,727,273	93,907	6,946,093	952,954
Holland .. ..	184,350	111,882	830,631	810,039	1,729,724	567,706
Belgium .. ..	2,146,991	4,818,196	6,906,115	2,175,133	9,517,105	1,731,224
France .. ..	64,941	4,089,907	1,203,390	8,291,052	10,200,549	12,773,816
Italy .. ..	..	140	155,714	2,460	239,177	10,383
United States..	126,500	9,408	3,537,414	626,958	531,908	122,324
Other Countries	1,314	5,782	1,130	2,250	247,911	33,360
	2,609,161	9,059,588	14,361,667	12,001,799	29,412,467	16,191,767

Table of Imports and Exports of Wool in the following years, distinguishing Foreign from Colonial.

	1852.		1853.	
	IMPORTS.	EXPORTS.	IMPORTS.	EXPORTS.
British Possessions out of Europe	52,181,269	8,873,902	57,100,215	7,355,249
Other parts .. ..	29,117,504	4,837,821	33,901,738	3,911,690
	81,298,773	13,711,723	91,001,953	11,266,939
Alpaca and Llama	2,013,202	18,264	2,068,594	49,994
	83,311,975	13,729,987	93,070,547	11,316,933

	1854.		1855.		1856.	
	IMPORTS.	EXPORTS.	IMPORTS.	EXPORTS.	IMPORTS.	EXPORTS.
British Possessions out of Europe..	70,785,545	16,940,858	74,613,223	17,565,645	81,893,148	19,804,084
From other parts..	34,068,937	7,526,426	23,240,516	11,846,817	31,343,751	6,793,725
	104,854,482	24,467,284	97,853,739	29,412,462	113,236,899	26,597,809
Alpaca and Llama	1,267,513	41,979	1,446,707	41,004	2,974,493	81,984
	106,121,995	24,509,263	99,300,446	29,453,466	116,211,392	26,679,793



Table referred to at pages 632-4.

PLACES.	POPULA- TION.	NUMBER OF PIECES.	VALUE OF PIECES.		
			£	s.	d.
Colne, including the Township ..	2,757	13,534	16,994	7	0
Trawden Township .. ..	1,120	7,578	10,343	0	0
Foulridge .. .. .	615	2,919	3,112	0	0
Barrowford .. .. .	1,006	4,793	5,944	10	0
Marsden, Great and Little ..	1,765	14,019	18,506	7	0
Total of the Chapelry of Colne..	7,263	42,843	54,900	4	0
Burnley, including the Township ..	1,890	7,662	10,787	0	0
Ightenhill Park .. .. .	129	832	1,206	8	0
Worsthorn .. .. .	471	..	..	..	..
Habergham Eaves .. .. .	1,276	1,564	3,265	0	0
Cliviger .. .. .	1,054	3,597	8,438	0	0
Briercliffe and Extwistle ..	753	6,336	8,470	8	8
Total of the Chapelry of Burnley	5,573	19,991	32,166	16	8
Roughlee Township .. .. .	395	2,288	2,617	0	0
Goldshaw and Old Laund .. ..	527	3,619	4,294	0	0
Reedley Hallows .. .. .	271	2,178	2,913	0	0
Wheatley and Barley .. .. .	424	998	1,312	6	0
Total of the Chapelry of New- church in Pendle .. .. .	1,617	9,083	11,136	6	0
Downham .. .. .	426	130	162	0	0
Twiston .. .. .	127	1,382	1,820	0	0
Total of Downham .. .. .	553	1,512	1,982	0	0
Padiham Township.. .. .	1,398	832	1,081	12	0
Hapton .. .. .	336	..	..	..	..
Higham and West Close .. ..	501	4,942	10,106	8	0
Simonstone .. .. .	230	416	476	12	0
Huncote .. .. .	493	..	..	..	..
Altham .. .. .	245	..	..	..	..
Total of Padiham .. .. .	3,203	6,190	11,664	12	0
Whalley Township .. .. .	694	300	400	0	0
Read .. .. .	276	..	..	..	..
Wiswell .. .. .	226	..	..	..	..
Pendleton .. .. .	331	620	750	0	0
Hey Houses.. .. .	76	450	562	10	0
Total of Whalley .. .. .	1,603	1,370	1,712	10	0
Clithero .. .. .	830	..	..	..	..
Mearley .. .. .	72	390	524	0	0
Chatburn .. .. .	346	900	1,270	0	0
Worston .. .. .	133	100	212	10	0
Total of Clithero .. .. .	1,381	1,390	2,006	10	0
Grand Total .. .. .	21,193	82,379	115,568	18	8

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APPENDIX.



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